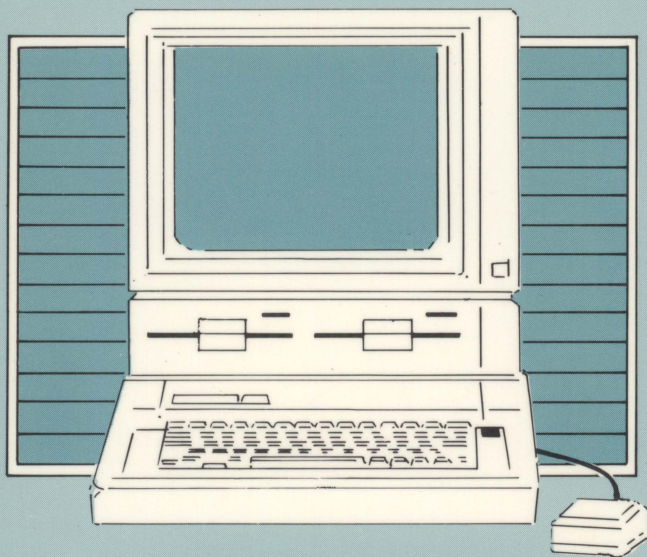


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# **ESSENTIAL GUIDE TO**

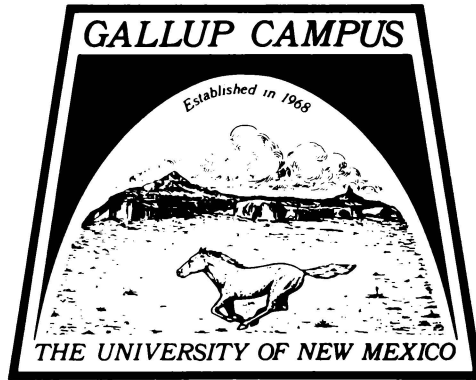


# **APPLE COMPUTERS IN LIBRARIES**

**VOLUME 1  
PUBLIC TECHNOLOGY:  
THE LIBRARY PUBLIC ACCESS COMPUTER**

**BY JEAN ARMOUR POLLY**

**MECKLER PUBLISHING CORPORATION**



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# **Essential Guide to Apple Computers In Libraries**

Volume 1  
Public Technology:  
The Library Public Access  
Computer

**Essential Guide  
to Apple Computers in Libraries**

*Series Editor: Jean Armour Polly*  
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**Meckler Publishing Corporation**



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## FOREWORD

Since 1981, the Liverpool Public Library in Liverpool, New York, at which I work has offered free computer use to the public. In 1984, we began to circulate software, and in 1985, we put an electronic bulletin board up to run whenever the library was closed. Over 14,000 calls have been logged on that computer phone line since then, and usage shows no sign of letting up. The circulating software collection is extremely popular; many titles are available by reservation only, as they are never idle on the shelves.

We have certainly broken some new ground over the years and have learned much about public-access computers from which other libraries might benefit. Additionally, the responses of over seventy librarians to a computer survey are summarized here to give a larger picture of public-access Apple computers in 1986.

I would like to thank Meckler Publishing Corporation for the opportunity to write the book, and Fay Ann Golden, Director of the Liverpool Public Library, for the opportunity to learn about bringing micros to the people,

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and for seeing so long ago that public computers weren't such a crazy idea after all.

Portions of the chapter on electronic bulletin boards were originally presented at the 1985 ALA Annual Meeting in Chicago and also appeared later in *Library Software Review*, December 1985.

Finally, I thank my husband, Larry, for reading the manuscript and transferring my Apple files to IBM format so that the publisher wouldn't have to retype everything. Ah, technology!

# **Essential Guide to Apple Computers In Libraries**

Volume 1  
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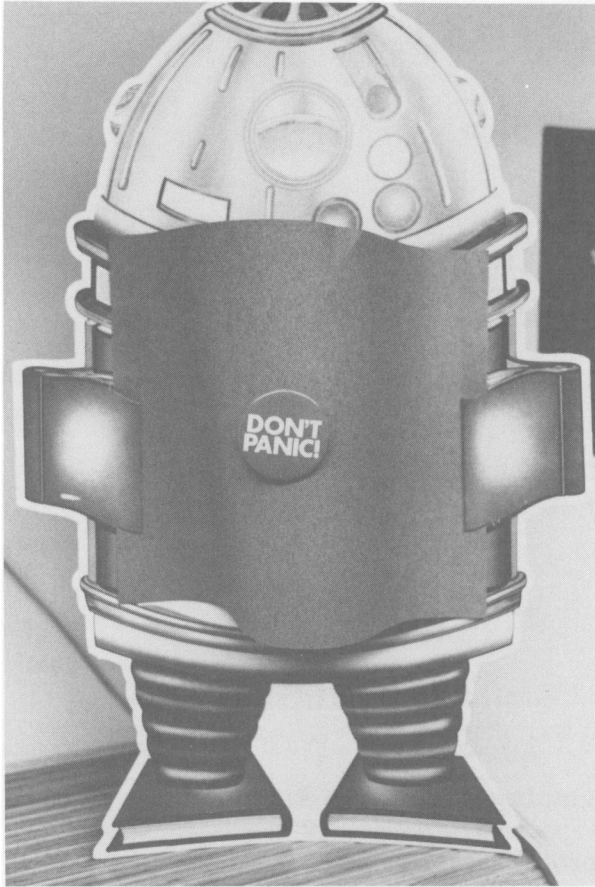
## **IN THE BEGINNING...**

In the beginning, there were Apples, and, well, Apples....

The proliferation of public-access computers in libraries has been a fairly recent but widespread phenomenon. Documented in 1984 by the Bowker National Library Microcomputer Usage Survey, twenty-six percent of public libraries reported current use of at least one microcomputer. Almost forty-four percent of these libraries allowed patrons access to the keyboard, too.

Since then, owing mainly to glowing reports of successful public-access projects as reported in library professional literature, the number of public computers in public libraries has increased rapidly. Everyone wants one in their library. A computer makes for good public relations. It is a visible example of "how libraries have changed from the Old Days," and it is worth many column inches in the hometown press.

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*"Robot" greets visitors to the computer lab.*

Adults who haven't gone inside a library in years suddenly turn up to take "computer comfort" classes. Retirees spend a morning learning BASIC programming, and a flock of young adults take over the afternoon playing interactive adventure games. Weekends and evenings, whole families gather 'round the electronic fires to use educational software. Library staff have even been known to come in to work early, and go home late, just to get in a few more precious minutes on the computers.

### **A Database Begins**

The Public Library Association's Task Force on Microcomputers in Public Libraries began a database, in



early 1983, to identify libraries using microcomputers. An application was developed which debuted at the American Library Association's Annual Conference, held in Los Angeles that year. The task force encouraged any library using micros to join the database, regardless of its mission; public, school, special, academic, military, and other libraries found their ways into the database.

This project was one of the first national resources containing multiple types of libraries and multiple types of computer equipment. Other information available on individual libraries included a contact name, specific equipment summaries, applications used, area of expertise, ability to share information, and the status of public-access computers at the library. The database has continued to gain members through exposure in professional literature, and provides an inexpensive and useful way for libraries to contact each other for information-sharing. In the autumn of 1985, a second edition of the database was distributed to all libraries listed in it.

### **The Survey for This Book**

From this latest copy of the database, 100 public libraries were selected to receive a survey. The library had to have listed at least one public-access Apple computer in its PLA database application, or update. The first 100 listed were chosen. This encompassed libraries from thirty states and one Canadian province. The smallest was a one-room library, and the largest had many branches. A very comprehensive survey was mailed to these libraries in January of 1986; seventy of them responded. It is on these surveys, and my own experiences at Liverpool Public Library, that this book is based.

### **Early Public-Access Apples**

Among those libraries responding to the survey, the first public-access Apple computer to be installed was that of the Fairport Public Library, Fairport, New York. Their Apple II+ with one drive opened to the public in October

## **6 The Library Public Access Computer**

of 1980. A nineteen-inch color television provided the video display, and game paddles and a 16K language card system rounded out the package. A Trencom 100 printer was available for staff use only.

Another early public Apple appeared at Park Ridge Public Library, Park Ridge, Illinois, in January of 1981. They also began with a single-drive Apple II+. Their computer had the regulation 48K, and boasted a real color monitor.

By June, a close neighbor of the Fairport Public Library--Pittsford Community Library--had also acquired a 48K, one-drive II+.

And in July, we at the Liverpool Public Library had the fun of opening all our new Apple boxes. In early October of 1981, the 48K, one-drive, Bell and Howell Apple II+ computer first welcomed the public to its thirteen-inch color television screen. Our local school district was using the so-called "Black Apples" (the cases were black instead of standard Apple cream), which is why we acquired the Bell and Howells. Also, the B and H specs, as built by Apple Computer, included several video outputs, multiple power outlets, and a volume control located in back.

### **Recent Installations of Public Apples**

The most recently opened public Apples, as identified by the survey, differ from the early installations in several ways.

First, the standard hardware configuration is different. Most libraries buy an Apple IIe, which comes with 64K standard memory. But most of these libraries also buy an extended eighty-column card, which not only allows them to see eighty columns of text on their screens, but also increases the available memory to 128K. Most libraries also purchase two disk drives and some type of printer. Many also opt for color displays on public equipment. These days, many software packages require 128K minimum memory, and they may require two drives. In the old days, you could get

away with 48K and one drive. Now, that same system is sorely limited in the range of commercial software it can run.

Second, most libraries acquiring Apples five years ago bought only one. It was for the public, but staff used it for library purposes, too. Now, according to the survey, libraries are buying multiple systems, some dedicated to the public and some strictly for staff use. This is a function of how librarians have embraced the power of this technology, finding new uses for it, and requiring equipment to automate library tasks. But it is also a testimony for the drop in prices, even over the last few years, and the recognition of the education market by computer manufacturers. In mid-1981, our \$3,000 seed money bought us a one-drive, 48K, color television (not monitor), Apple II+, and about ten software titles. Recently, my Apple dealer quoted me an educational discount price on a 128K Apple IIc system with two drives and a monochrome monitor: about \$900.

The most recent public Apple in the survey is at the Kansas City (Kansas) Public Library. In August of 1985, they opened a 128K Apple IIe to the public. It has a color monitor, two single-disk drives, and a C-Itoh Prowriter printer. Within the past six months, they have added a second system, identical to the above, except that it has a monochrome display. And they report about \$3,000 total has been invested in hardware to date.

The Glenside Public Library District, in Glendale Heights, Illinois, opened two Apples to the public in February of 1985. They began with single-drive systems, but within a year, had acquired second drives for both. Two Epson printers were also part of the initial set-up.

In Piqua, Ohio, the Flesh Public Library also opened two IIs to the public in February of 1985. They purchased Duodisk drives for each and shared use of a Brother HR-25 printer.

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### **Where the Rest of the Apples Fell**

The survey found that the number of public Apples steadily increased after the sole one identified in 1980. There were five opened in 1981, eleven in 1982, fifteen in 1983, twenty-one in 1984, and seven in 1985. The drop in 1985 is probably due to the cut-off date for the second edition of the PLA Task Force's database, from which the survey sample was drawn. The remainder of the respondents did not know when their Apples became public or did not answer the question.

## **POPULAR HARDWARE**

### **Monitors in Use**

About half of the libraries surveyed also chose color displays. At my library, we have a monochrome display on one Apple and color on the one used primarily for games. Color, of course, is better for most graphics, and many educational games and programs use color to their advantage. Some even require a color monitor to run. Additionally, users see the world in color. To a person using a computer for the first time, color is "friendlier," and certainly shows off the computer's capabilities in an often show-stopping way!

Monochrome displays, on the other hand, are better for libraries primarily planning to put a lot of text on their screens. Word processing on a fuzzy screen can quickly force one to reach for the aspirin. Easiest on the eyes are the amber or green displays.

There are two main types of color monitors--RGB (Red-Green-Blue) and composite. Composite video is the

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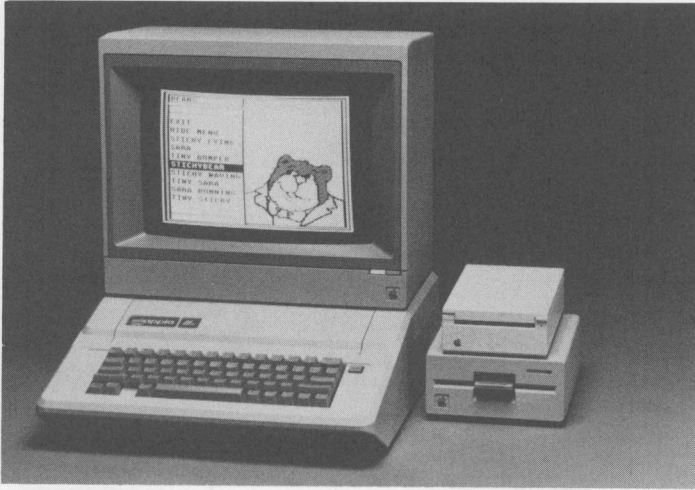


*The most popular configuration with libraries is the 128K Apple IIe, with two drives and some type of printer.*

garden-variety video output from the Apple. It is perfectly fine for most users, although eighty columns of word-processing on the screen may be illegible. RGB monitors require a separate interface card, which creates a new and more pure video signal.

A switch on the front of the Apple RGB color monitor lets you select monochrome or color display. The interface card switches let you choose among green, amber, blue, and white as your monochrome default color. You might think that this would solve the problem, and give you the best of both worlds, right? Well, it turned out that some programs just did not get along well with this monitor, or its interface card. One of these was *Dazzle Draw*, a

graphics program by Broderbund. We had to wait several months for Broderbund to come up with a fix so that we could use our software with this monitor. We also had problems reading text in some color games and adventures. The letters have multiple colors, even within the same letter. Most programs, however, work well on this monitor, and we do word-processing on it all the time with no ill effects.



*Apple's ColorMonitor IIe displays color graphics as well as clear, 80-column, monochrome text. Courtesy of Apple Computers, Inc.*

Recently, Apple released the Apple IIe color monitor, which does not require an RGB slot 3 interface. Its composite signal even works passably well with an eighty-column text screen, although for long word-processing hauls, I still use the trusty old Apple Monitor III with its green screen.

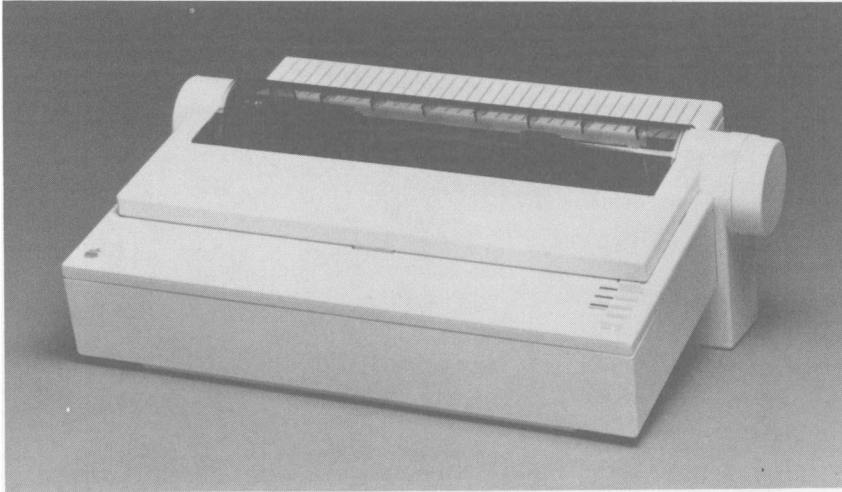
### **Printers in Libraries**

Librarians agreed that while you don't have to have a printer attached to your computer, it greatly enhances the system and opens a vast world of new applications. We opened our first public Apple without a printer and ended up getting one within the following six months. Librarians



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and patrons want a way to get a hard copy of their work on the computer. Whether it is the library director's need for a budget printout or a local club's need for mailing labels, sooner or later you will want a printer.

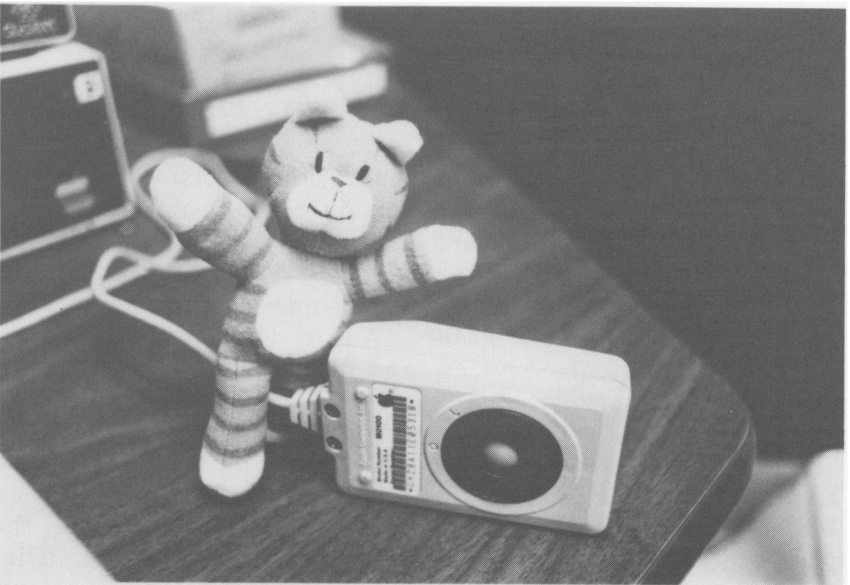
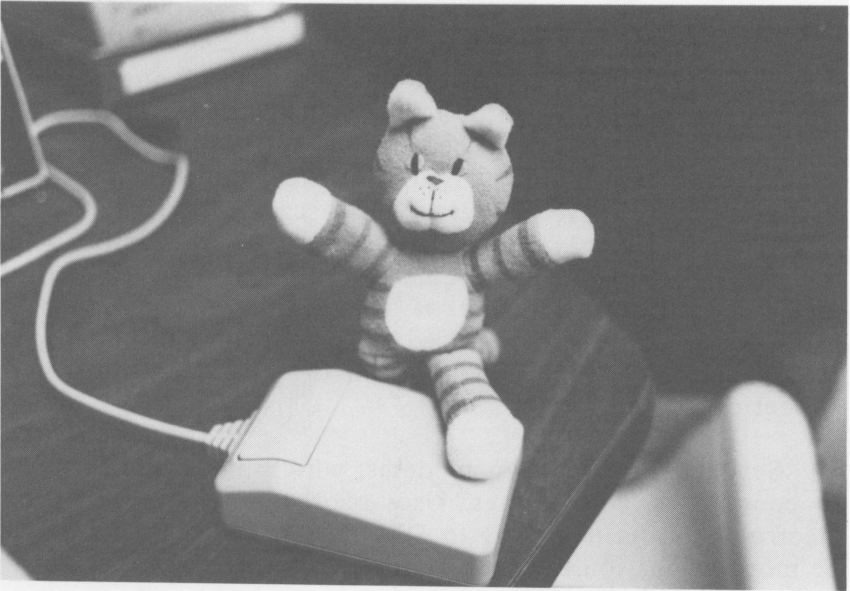


*Apple's ImageWriter II dot-matrix printer provides built-in color printing capability, as well as three different speeds for draft, correspondence, and near letter-quality output. Courtesy of Apple Computers, Inc.*

The printers most frequently purchased by librarians include those made by Apple, Epson, Okidata, and C.Itoh. Many librarians mentioned the noise factor introduced into the library by the printer's operation. When considering purchase, one should ask to hear the printer run. You may find sound muffling equipment a necessary purchase. Enclosures like this will cost at least \$100, and frequently several hundred dollars, depending on the size of the printer they must house.

### **Optional Equipment**

Other popular options included joysticks, a mouse (the input device used by so many programs lately), and a numeric keypad for fast number entry. Several libraries



*Top side (top) and underside (bottom) of a mouse.*

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bought Koala pads, a small graphics tablet used for graphic drawings and input.

At least one library noted the purchase of an interface card so that CP/M programs (Z-80 chip-based, another industry standard) could be run on the Apple as well as normal 6502-based Apple programs. The popularity of CP/M in a public library, or even the Pascal language for that matter, will largely be a matter of local demand. Our school district teaches a semester of CP/M programming, and only during that part of the year is our CP/M card used. Pascal is also rarely used at our library, although our *Pascal Tutor* software is popular in the circulating software collection.

Several libraries own modems, which allow their Apples to connect to phone lines. Uses of the modems vary from electronic bulletin boards to DIALOG searching. There will be more discussion of these functions later.

Electronic surge suppressors, and security furniture and devices were also frequently mentioned. Further information on this can also be found in subsequent chapters.

### Who Gets to Buy All This Hardware?

By far, the library director makes the decisions when it comes to selecting hardware for purchase. Sometimes it is even a director/library board effort.

Various department heads comprise the next most frequently mentioned group. Adult Services, Children's Services, Technical Services, and Reference staff have all been called to service.

An interesting development is the number of computer-specific job titles which have cropped up in libraries over the past few years. Time and again, the persons filling out the survey forms listed their job titles as: Computer Coordinator, Microcomputer Systems Coordinator, or Automated Services Coordinator. There was a Computer Technician, a Computer Lab Coordinator, and a

New Technology Coordinator. Clearly, a whole new library field is opening up for the librarian who can operate a computer: library schools take note!

### **And within a Few Years, We Got....**

The survey asked what equipment the libraries then owned, besides what was initially purchased, and what they planned to add in the following fiscal year. Most libraries either bought more complete computer systems or upgraded the initial ones. It was a rare library, indeed, that responded "Nothing. We have enough computers here!" Upgrades sometimes included a second disk drive, a printer, or more memory. More systems purchases sometimes meant that they were for staff use only. The number of library applications for which microcomputers may be used is staggering. Often, even if staff time is reserved on the public computer it is not enough.

Although many of the libraries did buy Apple equipment for the staff, a significant number purchased IBM or MS-DOS-type machines for in-house use. Is IBM becoming the machine of choice for so-called "serious use?" Many of the library software packages were first designed for the IBM, regardless of the fact that in the 1984 Bowker study, Apple computers were in fifty-eight percent of the libraries reporting microcomputer use. IBM garnered only twelve percent of the library market. For some time, IBM was perceived as the computer to look for if you needed a heavy-duty database, mass storage, or a local area network. Since the advent of such popular Apple programs as *AppleWorks*, and the now-common availability of low-priced hard drives and extra memory, we should expect to see a definite rise in Apple's vertical market library standing.

Public-access computers added by the surveyed libraries were overwhelmingly Apple. Several librarians stated that they thought Apple computers were "the most user-friendly around." Many libraries standardized on Apple equipment because the local school district also used it. School children were most familiar with Apple and the libraries

## **16 The Library Public Access Computer**

wanted to capitalize on the training they had had in school, thereby reducing the need to spend librarians' time teaching computer use. Others felt that previous software investments committed them to continue buying Apples. Some libraries bought Apple IIcs to supplement their public computers. A few others bought public Macintoshes and reported great success with them.

### **What Are Libraries Spending on Computer Equipment?**

At least five libraries acquired their initial equipment as a gift. One mentioned the importance of cultivating "angels" like this, and stated that her library could not have gotten into microcomputing without the ongoing support of Friends' groups. A Rotary Club donated one library's computer, and LSCA System grants paid for another. Most libraries reported expenditures of between \$2,000-\$3,000. Expenditures in libraries with many micros for public and staff exceeded \$8,000. The highest amount noted by a survey respondent was "over \$100,000."

Very few libraries had an annual hardware budget. Those that did said that it was in the \$2,000-\$3,000 range. At Liverpool Library, we have about \$3,000 per year to spend on hardware for the computer area. This is useful for adding new systems as the prices become advantageous, and for buying little add-ons and upgrades for our existing systems. It is important that libraries think of the hardware collection like they think of other materials. Things wear out, they break, they become outdated, they must be replaced. Even a modest hardware budget should be available annually.

### **What about Circulating Computers?**

Only eight of the libraries reported circulating any type of computer to the public. A Commodore 64, a Radio Shack, an Apple IIc, and a handful of Vic-20, Texas Instruments, and Sinclair computers were all that surfaced. The libraries with circulating computers reported myriad problems with them. The small computers (C-64, Vic, Sinclair, and TI)

were apparently not rugged enough to withstand the rigors of travelling. One library, however, reported a very successful circulating computer project. The Mary H. Weir Public Library in Weirton, West Virginia, allows small businesses to borrow a complete set-up, including computer, drive, monitor, and printer, for thirty days at a time.

### **And if You Had All the Money You Needed...**

Libraries responding to this question said that they would buy more computers. Some said that they would put them out for public use, and others wanted them for staff. A few specifically wanted IBM computers; some just wanted to upgrade their old Apple II+ computers to IIs. Several wanted public Macs, or laser printers, or color plotters. More memory and a hard-disk storage unit were on a few wish lists, as were letter-quality printers and color monitors. Two librarians asked for large-screen monitors to help give demonstrations, one bemoaned the lack of a part-time computer technician to maintain the equipment, and three asked for more staff in general. One wanted a variety of computers for the public to try, and another thought portables to be used anywhere in the library was the best idea. A robot even turned up on one of the wish lists!

### **How is the Equipment Holding Up?**

Apple equipment, thankfully, seems to be built to last. Fifty percent of the libraries surveyed said that their equipment requires only occasional repairs. About fifty percent checked the box that said "someone up there likes me," instead, meaning that their computers have not broken down (yet). Disk drives are notorious for creating numerous problems which can sometimes be difficult to trace. Printers also require some maintenance beyond changing the ribbon.

Fifteen libraries responding have an in-house person to maintain the equipment; one library found a volunteer in a local users' group willing to clean the computer regularly.

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Two libraries discovered technicians at their local school district or local BOCES vocational schools.

Walk-in service at the local computer dealer's store was the choice of thirty-two other libraries. One librarian scoffed at the "local" computer store: "the nearest one to us is 50 miles away!" However nearby the dealer is, librarians will find that service costs big bucks. At our dealer, technicians get \$40 per hour and parts are extra. A very friendly dealer might be approached and asked for an educational discount, but don't count on getting one.

Twenty-one libraries bought service contracts on their equipment, entitling them to service and maintenance for an annual fee. One library said that although they did buy a service contract after the computer's warranty ran out, they did not extend it a second time because it was not cost-effective. Microcomputers are just too solidly built. The chances that something will fail within the warranty period are remote, but the chances that something major will fail after that period is over are even more remote. Librarians would be better served to spend some money on computer cleaning supplies and plan a preventative maintenance program than to gamble on the wrong side of the odds, paying the dealer for service they will probably never require.

Don't make the mistake of one library, though! It bought a fair number of computer systems, and then, through a combination of lack of staff, lack of knowledge, or whatever, left all the systems in the boxes until about three-quarters of the warranty period had run out. They may still be lucky. On the other hand, they may discover too late a bad chip on the motherboard, a bad disk drive, or a quirky power supply. The moral is: don't buy equipment until someone can set it up and let it run. I have heard other librarians tell similar stories: equipment bought, never set up, never used. Some librarians still say "I don't know what to use it for" or "I don't have the staff to make it public" or "I'm afraid of the computer, so I don't let it see the light of day." My response is, pack up your system and send it to me. There may have been an excuse for this sort of thing a few years ago, but with the

number of conferences and regional workshops on microcomputers, it just won't wash these days. There is help out there. Join a computer users' group in your area. They are invaluable sources of people who know something about computers. Haunt your local Chamber of Commerce, or ask around the school district. How many parents have come in to use the public computers, and find that their children teach them everything they need to know? Someone in your area will know about computers and be willing to help you. And, as you will see in the chapter on training the public, you do not need to be a computer whiz at all.

### Checking out Your Local Dealer

Again, find someone who can help you. This person's advice will be indispensable when you find yourself talking "computerese" at the hardware dealer's. If you can't understand what the salesman is talking about, don't be afraid to ask and be shown how the equipment works. If the sales reps do not have time for you, either find a different dealer or ask for an appointment at a better time. Some salespeople will come to your library and demonstrate equipment there. Others will let you come to the store before it opens to the public, so you won't have so many interruptions to deal with. Also beware of the sales staff who just know hardware, or just know software. You want to find a person to advise you on both. This may prevent problems later, when you find that the \$250 database management software you bought will not work with your particular printer.

Find out about educational discounts on hardware and software. Ask about walk-in service, and what the charge is. What do their technicians charge per hour? Will the store give you a "loaner" if the repairs take more than a day or so? Does the store come and set up the system for you, or are you on your own?

Tell the sales staff how you plan to use the proposed computer, and how much use it is expected to get. You don't need to buy more than 128K for a "garden variety"



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system, no matter what the computer store says. Two drives are very useful, no doubt about it, but an internal clock is a luxury, unless your software demands it. Color monitors are great, but you may find a monochrome one easier on your eyes. And check the print size on the monitor before you buy--trying to read eighty-column text on a small screen is almost as bad as trying to read the *Compact Oxford English Dictionary* without a magnifying glass. Do you really need a mouse? Only if your software choices demand it. You may want a joystick, even if you don't intend to collect arcade games. It is a useful input device used in many graphics and other applications. Be sure to get a stick with two buttons, not just one, for maximum flexibility. Ask the salesperson how rugged the joystick is and how easily repaired it is. In fact, slip around to the technician and ask him two questions: "What's the brand of joystick you most commonly have to fix?" and "What brand of joystick is the easiest to fix?" In the past five years, our library has purchased at least six joysticks, but then, we have an arcade collection and they are put to a lot of use and abuse.

### Printer Selection

When confronted with printer choices, ask to see several things. What kind of fonts does the printer use? Ask to see a printing sample of what it can do. Most printers will have a "draft" or "quick and dirty" mode, and a slower, better-quality mode. You will appreciate the fast printing (say, over 160 characters per second) when you find yourself with a long printout. In addition, most will be able to print condensed lettering, superscripts and subscripts, bold lettering, italics, and extra-wide letters. All of these things are useful in library applications. Find out how much programming you will have to know to access the printer's features. Look at the manual. Is it understandable? Is it written on a novice level or is it aimed at programmers? Check the index--there is one, isn't there? Does the index use "real language" you can understand?

Ask to see how the paper is loaded and unloaded. How easy is it to change a ribbon? What do replacement ribbons cost? Will the proposed printer let you load standard pinfed mailing labels? Does the printer have a single-sheet, friction feed capability? This is important if you want to word-process onto your own letterhead. Some printers even let you insert an envelope, or single sheet, without having to unload your pinfed paper.

### **Printers and Catalog Cards**

If you want to use your printer for catalog cards, you will need one that feeds the paper stock from the bottom, not the top. Check your proposed catalog card software to see what printers are recommended. You may also want to take along some pinfed card stock and try running it through the printer. Jammed cards are the bane of any processor's existence, as you will find in the cries for help in almost any copy of the *Apple Library User Group Newsletter*, or in *American Libraries'* Action Line section.

### **Printer Interface Cards**

The interface card which will normally sit in slot 1 of your Apple IIe allows the computer to connect to your printer and talk to it. Apple IIc users already have a serial port for this, so will not need to be concerned with buying a separate interface.

Printer interface cards may be "bundled" into your complete printer purchase by your dealer. You do not have to buy the interface the dealer throws in. It may be a "plain vanilla" card, which, though a workhorse, may not fit your particular needs.

Some typical printer interfaces may allow you to print graphics or pictures from your monitor screen. These "smart" cards will let you rotate the picture, or print in double-size or enhanced modes. Some cards support the new color printers. Make sure your choice of card is not too exotic, meaning that it is not too different from one

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of the "standard" printer interfaces. Ask to see several graphics software programs run with the interface. Does the card appear in the printer set-up screen? If it does not, then maybe the card can emulate one that does. Our library has a Microbuffer interface which "looks like" the more familiar Grappler Plus card to many software programs.

### Printer Buffers

A print buffer is also quite useful. These are sometimes resident on your interface card, or may stand alone between your interface and your printer, or they may be built directly into the printer itself. Your computer can process data at a much faster rate than your printer can print. Think of a farmer with a payloader full of fodder. He dumps a full load in front of his cow, and then waits for the cow to eat it. When the cow has finished, the farmer can go back to the barn for more. Meanwhile, the cow waits.

The computer is like the farmer, the printer is analogous to the cow. One is always waiting for the other, which is wasteful of everyone's time. Enter the silo, or print buffer. The farmer can now keep loading his silo at his best rate, and the cow can work at emptying the silo at her best rate. Everyone is happy. The farmer gets done early and can move on to another project. The cow just keeps on chewing until the feeding is complete. Print buffers come in a minimum of 16K, and most are expandable to several hundred kilobytes. This means your computer can dump your huge print job into the buffer, and very quickly be free to do something else. One caution--the buffer should have an easy method to clear itself. If you start a long print job, and then realize that you didn't have the printhead to the top of the paper, you want to be able to reset the buffer, dumping all of its memory right away. Our library has a 32K Microbuffer card which can be dumped with only a "control/reset." Sometimes this has the added "benefit" of dumping you out of whatever program you are in! On one of the other computers, we have a 16K stand-alone buffer with a reset

switch on it, which leaves your computer's program alone. The printer has a 3K buffer in it, though, so just dumping the memory of the stand-alone buffer isn't quite enough to stop the printer immediately. We could open up the printer and turn off the switch that allows the 3K to accumulate, but we would pay for that luxury with a slower print speed. We would rather have the speed all the time and waste half a sheet of paper sometimes.



## **HARDWARE SET-UP AND MAINTENANCE**

The time to figure out where the public computers are going to be placed is before they arrive, not after!

Of the libraries surveyed, ten identified the adult room as the site for their computers. Another six located them in the children's area of the library. Ten libraries had separate computer rooms. Others kept the computers near the circulation desk, the reference desk, in Young Adult Services, or in the media area. One librarian was at a loss to designate the area her computer was in--"We're a one-room library!" she explained.

### **The Privacy Issue**

Overwhelmingly, librarians were satisfied with their computer arrangements. Most kept their computers in clear view of everyone. While this may be wonderful for security, it is not always the best for the patron. The shy child or adult may not want four or five onlookers, innocent as they may be. A private letter should be

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word-processed in private. A brush with technology should be experienced at the patron's own speed, not with encouragement (or discouragement) from kibitzers. Some libraries mentioned private carrels or privacy screens to get around this dilemma. Others opted to hide the computers behind furniture, in closets, or under stairwells. At least one library reasoned that adults required private spaces, but children probably could get along in public areas.

### Problems in Site Selection

Most frequently mentioned by the librarians surveyed was the lack of suitable electric outlets for the computers. This was especially a problem in older buildings. Besides old and outmoded wiring, the lack of grounded outlets made a visit from the electrician a necessity. A listening room was completely dismantled by one library, and a fish tank banished across the room by another, all in the name of high technology.

At Liverpool, the first Apple was set up in the children's room, between the encyclopedias and the books on witchcraft. I have always thought of this as a particularly appropriate place. It was in plain view of everyone and attracted crowds of eight to ten people, hanging over the card catalog which was supposed to serve as a buffer. This also made it difficult for anyone to use the card catalog. The poor patron with the "legal" appointment found he was sharing his time with an audience. Although we made ongoing stabs at shooing everyone away, they had a habit of drifting back.

By the time we had our second computer, we had torn the fixtures out of an unused lavatory and made a semi-private tiny room, big enough for two people and the equipment. We put in a door with a window, and suddenly, there was a modicum of privacy. Adults invariably booked time on this "no games" computer, while the kids still went for the color Apple system in the middle of the floor. Currently, after much remodeling and a new addition, we have a computer room. While carrels are planned for some

of the future computers, the ones we have now are just on long tables. The "no games" one is turned so that it makes its own carrel with the wall and corner behind the patron. The color Apple is again in full view of everyone. The congregation problem has not gotten better in the private room. There will always be a trade-off between library security and patron privacy, and each library will have to find its own answers.

### **The Noise Annoys**

Many libraries complained about the noisiness introduced into the library environment by computers. In most cases, the noise from the printer was the most offensive, described as "several cats climbing up a blackboard."



*The Trace Soundtrap greatly cuts down on printer noise.*



It is surprising that the use of sound-muffling printer enclosures is not more widespread. Although the ones seen in many library supply catalogs are well into the several hundred-dollar range, Trace produces a terrific line of small enclosures for \$150 or so. We have used this hood on both Epson and Apple DMP printers and found that its sound-insulation properties are very good. The only possible drawback is occasional paper jams, as there is not a great deal of room for power cords, cabling, and paper to feed through the slot in our particular model. We found that the problem existed more often when used with the Apple DMP than with the Epson.

Other noise problems stemmed from people congregating around the computers. While your equipment is still new, it will attract crowds, especially if computers are rare in your community to begin with. Is it hard to imagine the public fascination, with, say, viewing a word-processing program at work--at least for very long. Some libraries thought they would solve the noise problem by refusing to collect arcade games. After all, they make noises themselves, the joysticks break down, they attract cheering sections, and generally interfere with calm and decorum. Our library, back in 1981, announced at the outset that we would not buy any arcade games. The local newspaper and various patrons promptly donated about \$600 worth of game software to our tiny collection of disks. We added the disks, and have not looked back since. But our Bell and Howell Apples have volume controls, remember? Some libraries have installed headphone jacks on their computers, which not only control the arcade noises, but also keep "beeps," such as those associated with incorrect *AppleWorks* commands, private.

### Furniture Woes

Another complaint voiced by the librarians surveyed was how hard it is to find suitable furniture for the computers. All the major library equipment and supply houses now have computer furniture in their catalogs. Also, there are many computer supply firms which will inundate you with catalogs containing modular furniture with ergonomic

designs, among their other products. Addresses for these mail order companies can be found at the end of the book.

The theory behind computer furniture is that it should be comfortable and flexible to the user's needs. The library public-access computer may have thirty or so different users a day, all of them with different needs.

First, people should not have to type "uphill." The chair and desk should be suited to each other so that the user's elbows can be bent at a right angle, not angled upward to reach the keyboard. There is no way to arrange this for every patron unless you are blessed with a pneumatic chair which can be raised and lowered on demand. Medium-duty chairs of this type start at about \$50 through the mail; we got one through a local office equipment store for about \$85. Five-legged chairs are more stable than four-legged ones, we found, and the advantage to buying locally was that we could test the casters as we rolled around the store's carpet. Right now, though, our patrons are sitting on regulation stackable chairs, with only the briefest suggestion of padding. They can only be comfortable for about an hour, which is the maximum amount of time someone can reserve the equipment, anyway.

Second, the tables must be sturdy and must have enough room for a computer and a printer, as well as space for manuals and papers to be spread out. We are planning for carrels, to enhance the privacy factor and to try to discourage crowds. In particular, computers should be accessible to patrons in wheelchairs. This means that your computer table surface shouldn't block the armrests of the wheelchair, so that the wheelchair can slide right under. In reality, your table will probably block access and force the disabled user to lean forward too much, or work to the side of the equipment. The Gaylord (and other) catalogs have special wheelchair carrels, which can be moved up and down to accommodate your needs. They are expensive, though, running about \$300-\$400. Another possibility is using a detachable keyboard, which could be held in the lap or on a nearby surface with a better height.

Another handy piece of furniture is a mobile table or cart of some kind on which the computer equipment can be placed. This makes the system much easier to move, should you want to take it to another area of the library for demonstrations, maintenance, or whatever.

### **Vandalism and Damage**

Although Apple computers are very rugged, some patron damage does occur. One librarian noted that her "keyboard fell to the 'Olympic Decathlon' players." Several libraries have had "bad keys" turn up on their keyboards. Sometimes this is a function of abuse, but sometimes it is more of a dirt problem than anything. If your building has a lot of dust, you should cover your keyboard when it is not in use. Dirty contacts have caused many a keypress to fail. During our library construction, we swathed our entire systems with huge trash bags. They were not a pretty sight but functioned perfectly well. Commercial vinyl covers are available for virtually any type of system configuration you have, or you could make your own.

Patrons have also tampered with equipment. One at our library tried to turn the Apple over so he could see how low a serial number we had! Patrons are forever fiddling with the color adjustments on the monitors. One turned down the contrast all the way, leaving the screen black for the next patron. We thought we had a bad video cable for awhile until we discovered this simple re-adjustment.

Printers seem to be a favorite target of patron tampering. All printers are not created equal. Some allow you to move the paper knob while the power is on; others will balk at the same treatment. Libraries have reported patrons trying to take printers apart, taking out ribbon cartridges to see how they work, and generally breaking off knobs and other printer controls in their explorations of high tech. Although we have signs posted saying "Do not load mailing labels or paper yourself. Ask at desk," patrons still kept loading the labels themselves. The problem was unloading the labels. They invariably thought that labels could be "backed out" of the printer like paper can. Wrong!

Some labels unpeel themselves from the backing paper and affix themselves firmly to the underside of the platen. Then the label lies in wait for the next time the printhead sails through, gets that all gummy, and presto, you are in for a \$30 cleaning job at the dealer's. We finally got smarter and took the labels out of the computer area altogether. Still, some people brought in their own labels and loaded them unbeknownst to us. This can't happen anymore, since the new computer room does allow us to keep close watch on the equipment.

### Security Devices

One library surveyed reported the theft of several interface cards from inside the Apple. Another suffered the loss of a modem. Only about one-third of the surveyed libraries reported any type of security devices on their computers. A library in New York State said that they had been vandalized, but that the burglars could not defeat the security cables on the public equipment. Guess what was stolen--the unsecured Apple in the administrator's office!

Some libraries have Apples with tops that screw down. This keeps away the interface card thieves only until they can find the correct-size Allen wrench (or whatever). Other libraries trusted their general building security system and locked doors. Another popular solution was to bolt the equipment to the tables, using special security bolts, or to use a carrel or other enclosure with a locking top. The library catalogs are full of furniture for this purpose.

Still other libraries used a vended system for their Apples. The computers are locked in a case, which only unlocks with a key. Yet, the keyboard and drives are accessible to anyone paying for computer time. The Gaylord "Compuvend" system is one like this.

An on-off key system and a motion detector alarm on the back of the Apple are two other solutions. So is securing everything with a high-strength cable, threaded through cable loops super-glued to all your equipment and

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then locked to whatever seems immobile. Although the cable systems are advertised in all the computer equipment catalogs, the one library reporting its use was not happy with the cable system. One promising cabling system is made by Secure-it, Inc. 10 Center Square, East Longmeadow, MA 01028 (413-525-7039). It uses your equipment's existing surface screws to attach special "Kablit fasteners." Aircraft steel cables 3/16 of an inch in diameter are then passed through the fasteners, which prevents the removal of the screws. The cable is then secured around the desk or table and is locked. The locks can be rekeyed, and multiple systems can be keyed alike or keyed differently for even more security.

A very interesting security system is called T-track, manufactured by Standard Duplicating Machines Corp., 10 Connector Rd., Andover, MA 01810 (617-470-1920). A "housing pad" is first set down on your work surface. It shields the "maze plate," which goes on next, from access. The maze plate is bonded to the top of your work surface, which locks the equipment firmly to the furniture. The "T-plate" then bonds to the bottom of your equipment. Its "T-posts" lock into the tracks of the maze plate below. Attempts to figure out how the maze works are futile, as there are dozens of unique mazes and permutations. The equipment moves sideways and up and down, but only the correct "key" sequence of moves will free the equipment. A visual key is provided for each T-track system so that you will be able to unlock it; keep this key in a secure area of its own! The manufacturer says that should you want to sell the equipment, the T-track device can be removed from both the equipment and the work surface without damage to either. The device can then be re-used on another computer.

If you don't mind screwing things into your furniture, check out the "security corners" made by Doss Industries, 1224 Mariposa, San Francisco, CA 94107 (415-861-2223). Constructed out of 10-gauge steel, they are bolted to your work surface to fit the corners of whatever you are trying to secure (printers, hard drives, etc.). The "security angle" then fits into the corner bases, and adjusts for heights up to seven inches. The base and angle are then fastened

together with special tamper-proof screws, which can only be removed with the special tool supplied. The screw heads themselves are then hidden by covers. The security corners take up an additional one-half-inch area in the corners of whatever you are securing. This company also makes security cabinets for the Apple II series which also bolt to your tables. It is the only such cabinet that I have seen which allows for side-mounted cooling fans, such as the Kensington System Savers. Yet another model features its own cooling and surge-suppression system built right into the cabinet.

The "Anchor Pad" system was the choice of several libraries. It is available for under \$100 from Anchor Pad International, Inc., 4483 McGrath St., Ventura, CA 93003,



*An Apple embedded in the Anchor Pad security system.*

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outside California (800) 4-ANCHOR, within California (800) 6-ANCHOR. The device features an adhesive mat, which secures to the work surface without damaging it. A steel plate is then attached to the mat and to the computer. The locking system is claimed to be virtually undefeatable, though authorized persons can easily remove the equipment for servicing. The company sells the set-up in two versions: the works--for the Apple, the drives, and the monitor, or in a single version to secure the Apple alone.

### Avoiding Hardware Failure

Very few of the surveyed libraries had the luxury of a captive computer technician to fix the equipment. A few more libraries reported that they undertake some preventative maintenance on their own.

There is one important adage to remember here: "If it ain't broke, don't fix it!" You may be tempted, as you become more and more familiar with your equipment, to start doing your own disk drive tune-ups and other delicate surgery. The advice is, don't do it unless you really know what you are doing. Some heavy-handed tinkering could, for example, move the drive head so that it looks for track zero in a different place than it exists on the disk. Zap! Input-output errors all over the screen, and you are left with a bunch of disks you can no longer load--that is, until a trained technician fixes the drive head. But there are some things you can do to maintain and clean the equipment which may make the trips to the techie less frequent.

### *How Hot Is It in Here?*

Integrated circuit failure is often a result of overheating. This was more of a problem on the Apple II+ series than on the IIs and IIs because of the more numerous chip populations on the II+ motherboard. The more chips, the more heat build-up inside the machine. If your computer is on all day, and if the expansion slots (in the case of a II+ or IIe) are full of interface cards, you will want to add a



cooling fan to improve the air circulation around the boards. Our IIe's slots are full of cards: printer, memory, clock, modem, mouse, and two drive interfaces. The electronic bulletin board runs on this computer all night. The fan is the cheapest form of preventative maintenance we have. We use the Kensington Microware System Saver fan, available from them at 919 Third Ave., New York, NY 10022. They list for about \$89. In addition to the cooling feature, the Kensington product gives you two extra power outlets, a front on/off power switch for your computer, and line-surge suppression. The power switch is very useful, as the Apple's own switch, in back, has a way of wearing out. When it goes, you're down until it can be repaired. The System Saver switch is quite rugged. When it does finally go, just hook your Apple back up to the power the old way, and use your Apple's old on-off switch in the interim. We have had no problem getting replacement switches for the fans; they are available at any electrical parts store.

At one time, we tried a fan which attached to the inside of the computer, rather than hooking on the outside. This fan was responsible for pulling dust inside the computer, so that a fine, 1/8-inch build-up occurred on all the chips. Nothing is a better insulator than dust, and we found that our "cooling fan" was doing more harm than good. The System Savers have performed flawlessly and do not have this same fault.

### Suppressing the Surge

The electricity that feeds your computer does not run an even course. There are probably tiny dropouts, glitches, and surges in your line all the time. This may only become apparent if you have a lot of equipment hooked to the same line your computer is on. We had one machine on the same circuit as a photocopier. Every time the photocopier was used for multiple copies, the computer would go into a tailspin. Memory was lost, programs hung--it was a real mess until we figured out the problem and moved the computer to an outlet on another circuit. We experienced similar problems when we used an outlet online with



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flourescent lights. We moved to a different circuit, and the problem was over. An energy management system in your building may be causing spikes and surges in your computer's electricity, as various heating and cooling units are turned on and off to shed the electrical load and reduce your building's draw. Inexplicable problems may show up due to fluctuations in the power supply, and not many of us can afford a clean, dedicated electrical line to the computers alone!

So, some form of surge suppression is called for, whether it is to filter out your building's electrical grumblings or protect against surges from nearby lightning strikes. The System Saver has a surge suppression system built into it, but you can find many others in the computer supply catalogs listed in the back of the book. And don't forget your modem! A surge suppressor should always be on the phone line, between the line and your modem. The suppressor also should be grounded. This will not prevent damage if a direct lightning strike hits your pole, but it will filter potentially damaging electrical noise from your equipment.

### **Static Electricity--the Hidden Enemy**

If the carpet around your computer generates static, or if the air is very dry, you may need to consider some form of static protection for your equipment. This has not been a problem for us; even with new carpeting in the computer room, the static level is very low. We try to remember to touch something metal before we touch the computer, if we are wearing wool clothing and the static seems at all bad.

Some home-brew enthusiasts like to mix a small amount of laundry fabric softener into water and then use a spray bottle to apply it to the offending carpet. Commercial static sprays may also be used for this. In the computer supply catalogs, you will find grounding plates to touch before you touch the equipment, and some surge suppressors have similar capabilities. Again, whether or not you need this is a function of your particular environment.

### Cleaning the Equipment

You will find that the monitor is a dust magnet. Some monitors have a fine nylon mesh anti-glare screen, and some have a glass screen. The mesh ones are more difficult to clean, as the dust collects in all the mesh pores. The Apple Monitor III has a screen like this.

We use products from Texwipe Co., 650 East Crescent Ave., Box 308, Upper Saddle River, NJ 07458. Their catalog has a full line of cleaning kits and supplies for virtually any type of office equipment, as well as computers. The monitors are cleaned frequently using the "Wet Dry" folded towellettes, and then wiped with a static-reducing "Techni-cloth." Stray dust is removed from the mesh screens using compressed air aerosol spray.

The keyboards take a lot of abuse, whether from dirty fingers or dust from the ceiling. We use metered spray keyboard cleaner, and Texswabs to get into all the cracks. You will be surprised how much grunge you can clean off keys you thought weren't too dirty! Cleaning the keys will protect the electronic circuitry and relays underneath. We also use Office Wipes to clean everything from ink stains on the computer to grimy telephone receivers.

A build-up of magnetic oxide particles on your drive heads must be cleaned, eventually. We wait to do this until we have a suspected drive problem. Very good quality disks will not deposit these particles, so buying good disks is the preventative measure. But when you are getting a lot of input-output errors, and disks won't boot properly, the problem may be dirty read-write heads. Many companies have special head cleaning disks for both 5 1/4-inch drives and 3 1/2-inch ones. Follow the directions carefully, and know which side of the disk from which your particular kind of drive reads. Apple Disk II reads from the bottom of the disk only, while IBM drives read from both sides. Don't bother putting cleaning solution on a side your drive will never read! It will take nerves of steel for you to listen to your drive being cleaned by one of these disks. It is akin to listening to sandpaper being rubbed across your turntable's phonocartidge.

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The Disk II drives can also be taken apart and cleaned with Texwipes, but the novice can do more harm than good. Get a sympathetic technician to show you how to do it, if you can; otherwise, use the head cleaning diskettes, but not as frequently as the box instructions recommend.

A frequent source of trouble is bad contacts on your interface cards. A thin corrosion appears on the gold fingers of the interfaces, and like magic, your electronic contact is gone. Problems with disk drives, printers, and modems have been cured by cleaning the interfaces at our library. While one can clean these gold fingers with a clean pencil eraser, we prefer to use "Goldwipes" from Texwipe. They not only clean the contacts, but also lubricate them and leave a thin coating to protect the gold from corrosion. And they leave no pieces of crumbling eraser to further contaminate the contacts. We also clean the slots now and again, using the same gold wipes wrapped around a Texwand, or swab. It is amazing how much dark corrosion shows up when you do this.

While you're under the hood cleaning the interfaces, push down on all the chips, to reseal them in the sockets. Some chips are very sensitive to heating up and cooling off, and the resulting expansion and contraction will force them up out of good contact with the motherboard or interface card. For some reason, our clock card and modem have loose chips very often. If they are loose enough, the modem won't work and the clock forgets what time it is. Check the motherboard for any dust build-up. If there is any, you can use a small portable vacuum made for this purpose, or use a judicious amount of compressed air. Remember to check all the cabling, especially on the drives. The ribbon cables become unseated very easily if the drives have been moved.

Printer maintenance involves vacuuming up the confetti that accumulates in the bottom of the chassis, and cleaning the print head from time to time. Check the owner's manual when cleaning the head: alcohol will melt some printheads into oblivion. Again, only clean the printhead if there is a problem, such as imperfectly formed letters. We use Texwipe products to clean the printers.

## **COLLECTING SOFTWARE**

According to the survey, while it is overwhelmingly the directors who select and buy the hardware, a much wider library group selects software for purchase.

Directors ran neck and neck with children's librarians for the honor. Farther back in the pack were the adult services librarians and a "committee" approach. Media librarians, YA specialists, reader's services, and reference librarians all order software.

Of the few libraries blessed with annual software budgets, eight said their budget was between \$1,000 and \$2,000. Eight more had budgets of \$500 to \$1,000. Under \$500 was the amount spent at four libraries, while one claimed an annual expenditure of \$5,000 to \$6,000. When asked about software purchased to date, seven libraries had spent up to \$500, five had spent between \$501 and \$1,000, and seven bought between \$1,001 and \$1,500. Six of the surveyed libraries reported software purchases of up to \$2,000, seven spent up to \$5,000, and three spent over \$5,000 in software over time.

### How Much Software is Being Collected?

With all these reported software expenditures, it is surprising that thirty libraries said that they owned fifty or fewer disks. Eighteen had fifty to 100 disks, and three had 101 to 150. Only three libraries reported collections of 200 diskettes and above.

Additionally, most libraries do not collect multiple copies of disks; only twelve said that they do. Of these twelve, many had circulating software collections or multiple public computers, where the need for numerous copies of popular programs is more acute.

At Liverpool, the collection numbers about 300 titles, and we do buy multiple copies. Sometimes we buy a copy for the reference collection and one for the circulating collection. At other times we must add second copies due to demand or long reserve lists.

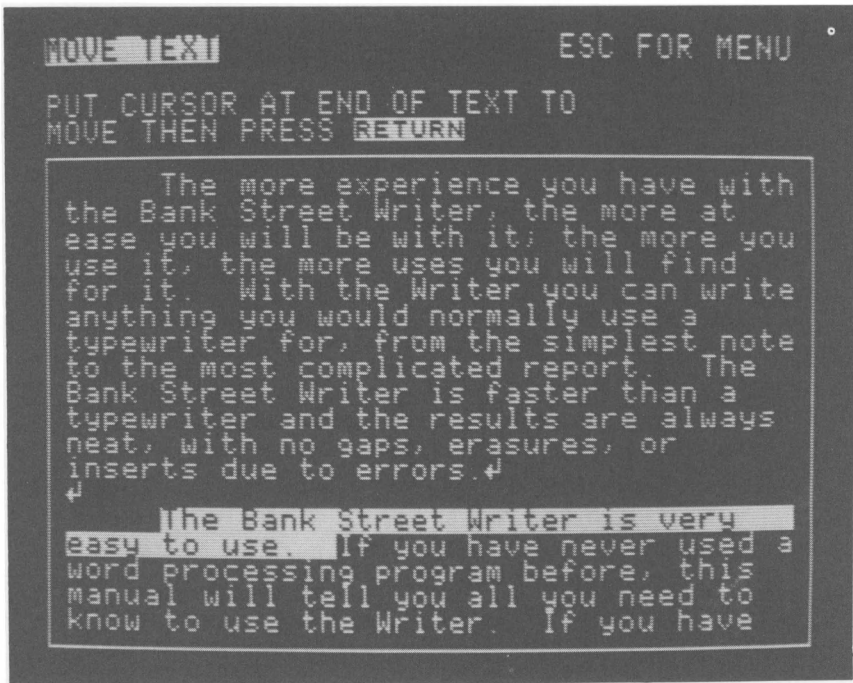
### What Types of Software Are Libraries Buying?

The survey asked what categories of software libraries added to their collections. Several trends emerged overall.

#### *Word Processing*

Every library surveyed owns at least one word-processing program. The most frequently mentioned ones were: *Bank Street Writer*, *PFS:Write*, *AppleWriter*, and the word processor in *AppleWorks*. (Publisher and other information regarding the programs listed may be found in the "Core List" section of this book.)

Libraries and patrons have many uses for a good word processor. Forms, lists, letters, school reports, and resumes are several popular applications. A program to be used by the public must be very simple to learn and operate. Most people do not want to spend time reading manuals; they just want to sit down at the Apple and print out their reports. Because they do not want to waste their time



Bank Street Writer, a popular word processor.

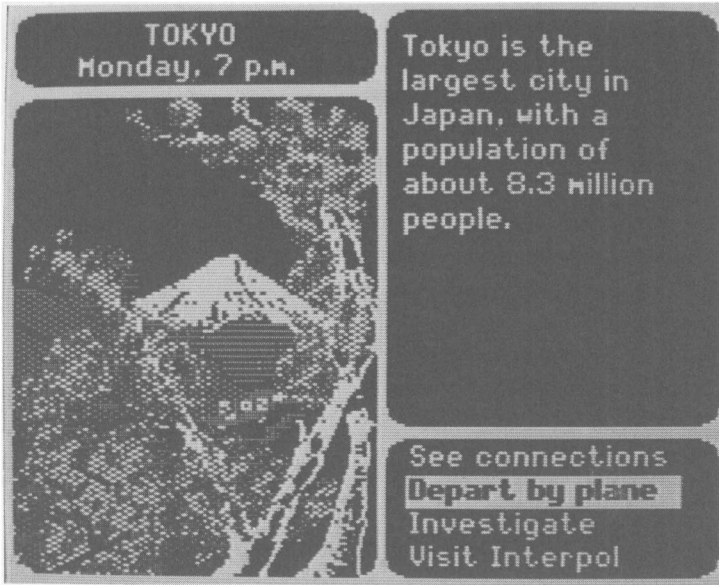
reading instructions, they often try to get the library staff to show them how to use the program, or better yet, do it for them. Librarians do not generally teach patrons to read the books on the shelves, nor should we feel pressed to explain the software we purvey in minute detail. We may feel compelled to learn all the ins and outs of our first few programs, but when our collections grow, we cannot give this type of service any longer.

At my library, we own the above word processors plus *Screenwriter II*, *HomeWord*, *Format IIe*, and *Perfect Writer*. And those are only the Apple word processors! We have more for other types of computers. Over time, we have embraced and then abandoned one word processor after another, so we can answer general questions about many of the titles. We are only experts, however, in the one or two programs we are currently using. For information on the rest, the patron is referred to the user's manuals.

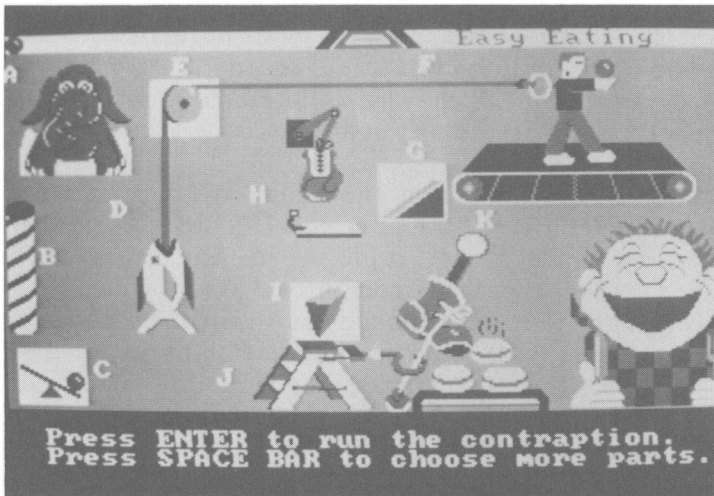
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### *Educational Software*

Fifty-eight libraries reported collecting educational games, drill and practice programs, tutorials, simulations, and



*Broderbund's Where in the World is Carmen SanDiego? teaches world geography and reference skills.*



*Screen from Bantam's Creative Contraptions.*

other educational software. Mentioned by name were: anything in the *Stickybear* series (*Stickybear ABC*, *Stickybear Numbers*, *Stickybear Shapes*, etc.), *Where in the World is Carmen SanDiego?*, *Mastertype*, *Algebra Arcade*, *Math Blaster*, and several computer tutorials. These and more are listed in the "Core List" later in this book.

Educational software is near and dear to most librarians' hearts. It is easy to justify purchase because it fulfills many of our missions at one time. We can support the local school curriculum. We can help parents help their children learn. We can help provide software for continuing or remedial education. Several librarians commented on the lack of good educational software on the secondary level. Others found that good preschool software was hard to find. There seems to be no shortage of software at the elementary level, however.

At Liverpool Library, the heaviest demands from parents are for preschool software. The retail prices for some of these titles are upwards of \$35, and they may only be useful to a family for a short period of time. Parents ask for ABC programs, counting programs, shapes and color programs, and concept programs. Everyone wants to use their home computers (or the ones at the library) to help their children get a good educational start. Many times, while Mom has one child listening to a library story hour, the youngest one is sitting on her lap at a public computer, learning all about circles! Another parent demand, especially during the summer months, is some type of drill and practice so the children's skill levels don't get too rusty over the long summer vacation. Reading, math, and spelling games and drills are the most frequently requested.

Children request the educational games that they are familiar with at school. They love to bring parents in to show them the software they are using in school. Although this would also be possible at a school "Parents Night," there might be too many students trying to get at a few computers for the children to give their parents a real demonstration. The library public computers give the families a chance for this extended "Show and Tell."



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### *Spreadsheets*

The spreadsheets, or "electronic graph paper," as they have been called, are among the most loved and the most feared and hated programs in library collections. Forty-six libraries listed at least one in their collection.

A "believer" will tell you that she puts all of her library accounts, her circulation statistics, and her budget projections for the coming fiscal year on a spreadsheet. She has found a foothold in the spreadsheet landscape and has learned to call it home. On the other hand, librarians may tell you that spreadsheets have a jargon all their own, and the command structure is difficult if not impossible to use. Building a template for a new file demands a math whiz, and creating a printed report requires nerves of steel. And don't try to explain it to a patron, who only has an hour to use the computer!

In the survey, I asked what software was used most often, and what was never used. The results are disclosed at the end of this chapter, but as a preview, the spreadsheet *VisiCalc* appeared on both lists! The spreadsheet integrated into *AppleWorks* was the most popular among librarians and patrons mentioning a title.

*VisiCalc* was donated to my library early on. I dutifully went through the whole tutorial, even made my own templates, and started saving some library data to the files. But because I didn't have to use it very frequently, I quickly forgot most of the commands. There was patron demand for the program at that point, though, and many of them struggled through the same tutorials I did. They didn't have much luck, either. We found that we were spending a large amount of time interpreting the manual to users, and began looking around for something else. We bought *C-Dex Training for VisiCalc*, which was a better tutorial for our situation than the one which came with *VisiCalc*. Shortly thereafter, *Multiplan* came out, a new spreadsheet with easier commands. We never bought it, though it was ostensibly better than *VisiCalc*; we still pictured hours of interpreting spreadsheets to patrons. We

just couldn't face it. *AppleWorks*, on the other hand, we would be happy to use.

### *Database Managers*

When a patron comes in and says he's got a mailing list of 300 names and needs to sort them by zip code, you need to give him a database management program. DBMs are also useful for many library purposes, mailing lists, accessions, serial lists, inventory, and more. Forty-four libraries reported owning at least one DBM.

Again, the overall winner was the DBM in *AppleWorks*. Other libraries swore by the popular and easy *PFS* series, which begins with *PFS-File* and expands into *PFS-Reports*. (Other titles, like *PFS-Write* and *PFS-Graph*, integrate into the same software family.) The *PFS* series is very easy for a patron to use, which may help to explain its popularity with librarians.

This series gets a workout at my library, too. The only problem with it is that if you want a "report-style" tabular printout, and you are in *PFS-File*, which will only print out in file card format, you have to boot up a second program. Then, you will probably find that your proposed report is too many characters wide for your printer. Back to the beginning, or truncate your report. Another problem has been that, since *PFS* has been around quite a few years, there are several versions of it. Our library has the II+ version on reference and the IIe/IIc version in circulation. Sometimes, patrons will come in with a file they created on another computer, using the IIe/IIc version; those files cannot be read by older versions. The patron goes away without a printout.

We have used many DBMs over the years. We started out with *Data Factory* version 3.0, and used it all the way up through 6.0 before we lost patience with it. Some of our files were transferred at this point to *The General Manager*, a good program but not easy to learn. Then *DB Master Plus* caught our eye, and most of our data was transferred over to that. We were content with that until

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*AppleWorks* came out, which then became the DBM of choice for most of our library applications. Thank goodness *AppleWorks* could read all the *DB Master* files; we were saved hours and days of retyping.

### *Graphics*

Forty libraries owned at least one graphics program, and for most of them it was *The Print Shop*. This terrific program prints attractive signs, banners, greeting cards, and letterhead using many fonts and clip art pieces. There are also three "clip art libraries" available separately. Now you don't have to find a staff member with neat handwriting to have a quick sign problem solved. At least one library decided not to put *The Print Shop* out for public use. For one thing, the banners take a long time to print out, and computer time was limited. The noise of the printer running was another factor in the decision. Mainly, the librarian didn't think the printer would stand up under the heavy use it would get. Also, she would lose a small fortune replacing printer ribbons.



The *Print Shop* software for in-house graphics and public use.

All of the above considerations are valid. At our library, we allow patrons to use *The Print Shop*. We do ask that if they are printing a banner, they choose a font that prints the outlines of the letters only. The patron can later color in the letters with felt markers or crayons. This not only saves wear on the dot matrix printhead, but also cuts the printing time. Sound is not a factor for us because of the Soundtrap printer muffling case. And finally, we re-ink our ribbon cartridges frequently.

A company called Computer Friends (see address in back of book) makes a Universal Mac Inker, an electric device which works like a champ. The original machine is about \$65, and you need to buy a driver for whatever type of printer you have. The drivers run about \$8.50 each, so if you have many types of printers, the cost is not prohibitive. You just put the printer cartridge on the driver, put a little ink (they sell colored inks as well as black) in the reservoir, and plug the thing into the nearest outlet. In a few minutes, the continuous ribbon loop has been re-inked. We take it off the machine and let it sit for a day or so to let the capillary action of the ribbon fabric carry the ink to all parts of the ribbon.

We have been re-inking cartridges for our Epson and Apple printers for several years now. We have only come across a couple of problems. Sometimes we forget a ribbon is running through the inker, and it overindulges! In this case, we let it sit around for about a week. Otherwise, we would get ink blotches on the printouts. The other problem is that cartridges don't live forever, and eventually the ribbon fabric weakens and can no longer be used. But this method sure beats replacing ribbon cartridges at our pre-Mac Inker rate.

### *Games*

The survey showed that libraries are collecting educational and interactive fiction or adventure games, but they are not buying arcade games. Fifty-three libraries reported collecting educational games, and thirty-one said that they

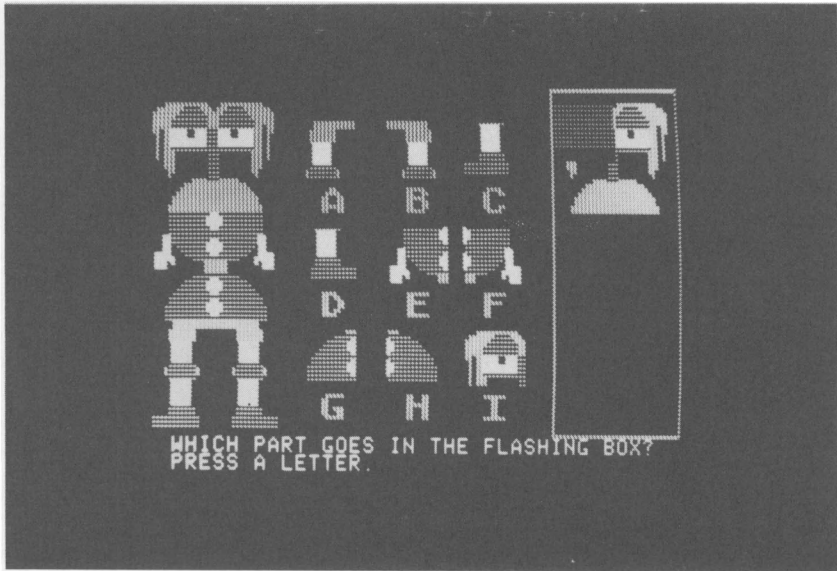
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did buy adventure games or interactive fiction. By contrast, only seven collect any type of arcade game.

Adventure games put the user "inside" an adventure, fantasy, or some type of exciting scenario. He may take on the guise of a character seeking some treasure, great truth, or other quest. In the course of his adventure, he may encounter monsters, answer riddles, use magic, and generally use his wit to solve the puzzles and win the game. Some adventure games rely on one's bloodthirsty-ness and swordsmanship. Others depend on cooperation, wit, or luck. The popularity of Tolkien's books and the fantasy genre in libraries make the adventure game a natural purchase. The games are extremely popular with young adults.

There are even "easy" adventures for the very youngest patrons, completable in twenty minutes or so. The more advanced a game is, the longer it will take to play. In my library, some of the games went on for months before they were solved. Patrons shared clues and maps with each other until finally, the game's solution fell before the onslaught of combined patron effort. Once an adventure has been solved and completed, it takes on the aura of a bestseller once read. It is not often perused again by the same group. Some games, however, reshuffle themselves each time the game is booted, so that it never plays the same way twice.

Titles mentioned by libraries collecting adventure software included the *Zork* series of adventures in the Great Underground Empire. These are text only; there are no graphics. *Zork*'s producer, Infocom, is well known for the literary quality of its games' language. The descriptive passages allow the users to "see" the landscape in a way that no mere hi-res (high-resolution) graphic would allow. Other titles mentioned were the *Wizardry* series and the *Ultima* series of games, both with graphics. For younger patrons, *Dragon's Keep*, *Chivalry*, and *Tonk in the Land of Buddy-bots* were favorites.



*Mercer Mayer's Tink! Tonk! series is a popular educational adventure about robots.*



*Bantam's Cave of Time from the Choose Your Own Adventure series.*

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Interactive fiction and adventure games are almost the same thing; in fact to some libraries, these headings are synonymous. Adventure games came first. Then publishers started translating books, such as *Fahrenheit 451*, to the small screen and calling them interactive fiction. Our library takes the position that something is not interactive fiction unless it pretends to be an adaptation of a conventional work of fiction, or the software package includes a fairly substantial book of its own. Of course, some games are both interactive fiction and adventure game. And the whole thing only becomes important if you choose to provide genre subject access in your cataloging, anyway. Popular interactive fiction at my library includes *A Hitchhiker's Guide to the Galaxy* and *Brimstone*.

Arcade games are something of a dirty word in most libraries. They conjure visions of smoky rooms, lit only by flickering computer screens, populated by shifty-eyed teens up to no good--certainly not the family-oriented entertainment that should be endorsed by the public library. Arcade games create noise, attract crowds, are hard on keyboards and joysticks, and provide no redeeming value unless you count the improvement of eye-hand coordination skills.

When we first opened our public computers, we loftily announced that we would not spend public funds to collect arcade games. Promptly, the local newspaper and several patrons donated about \$600 worth of games to us. The games are popular. Yes, they attract crowds and are sometimes noisy, and yes, they are hard on the equipment. But our patrons would not give up one of them. Our library collects *Mad Magazine*, *Sweet Valley High* books, top MTV albums, and other escapist items; why stop with the software collection? We have many arcade titles; the most popular are *Lode Runner*, *Summer Games*, and *Karateka*. Families come to the public library to play arcade games, feeling it is a more wholesome (and less expensive) environment than the local arcade.

Other libraries have specific "game days," at which time arcade games may be used.

*Public Domain Software*

Copyright-free, public domain software was collected by forty libraries. These programs usually come on disks with general titles, such as *Home and Hobby Disk #2*. There are quite often many programs on the disk, which normally can be purchased for under \$5. This "software-to-price ratio" is very attractive to librarians with little or no computer budget.

Public domain software is readily available. If there is a computer user group in your area, it will have a software library of these disks. Electronic bulletin boards, either local or national, are another source, if you have the equipment necessary to log on to one. There are also mail-order catalogs of public domain software (see address in back of book).

There are some problems associated with these disks, however. First, the quality of the software is uneven. Right next to the most terrific word processor you have ever seen will be a program that just rings the bell on your computer a given number of times. Second, the programs are in numerous stages of development. That means that very frequently they are bug-ridden and will not work. The advantage to public domain software is that it has no copy protection, and you can go into the program list, see what's going on, and fix the problem. Or, if you see a particularly elegant bit of code, it is perfectly proper to swipe it for your next program. Third, the programs hardly ever come with any instructions or documentation. You have to run them to find out what they do. But listing, rather than running, is usually the safer course: read on.

Another problem with public domain software is the occurrence of "worms" or "trojan horses." These are programs which can destroy your diskettes if run. You should know some programming, or at least know your source very well, before you put public domain software out for patrons to use. Sometimes you can spot a potential problem by listing a new program to see what it does, the title being not very descriptive. You may be able to catch a series of disk access commands, for example. Even if you



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don't know any programming at all, the evil people who write this type of program love to throw in a zinger at the end of their mischief, such as "Ha, Ha, Gotcha!!!", and you may be able to look for something like that in suspect code.

Another subtle trick I've seen in public domain software works like this. The program--say it tells you your horoscope--appears to run normally. You type in your birthdate, it comes up with your astrological sign, and it begins to tell you about your traits. Everything seems normal for a few screens until it starts telling you about your sexual preferences and then deteriorates into nothing but obscenities. You never would have caught this unless you listed the program code to your screen and took a look at it.

Fortunately, Facts on File has recently published a solution to these problems. *Software on File* is a twenty-disk set containing over 200 public domain programs with complete descriptions. The programs are virtually bug-free and cover all age groups and interests, from education to utility. The set sells for under \$200, and annual updates are planned.

### *Other Types of Software Libraries Buy*

Seventeen libraries reported ownership of at least one telecommunications program. This software allows the library computer to communicate via phone line to another computer out in the world, as long as the correct hardware is also in place.

Communications software may also be used to, say, connect an IBM to an Apple on the other side of the room, and share files, without the use of a phone line. Some of the *AppleWorks* files for this book were ported to an IBM clone for editing using this method, a serial card, and about twelve feet of ribbon cable.

Other telecommunications programs used by libraries include software to run electronic bulletin board systems. More information on this is available in a later chapter.

No favorite communications software was mentioned by name in the survey.

### **The Software No One Talks about: Copiers**

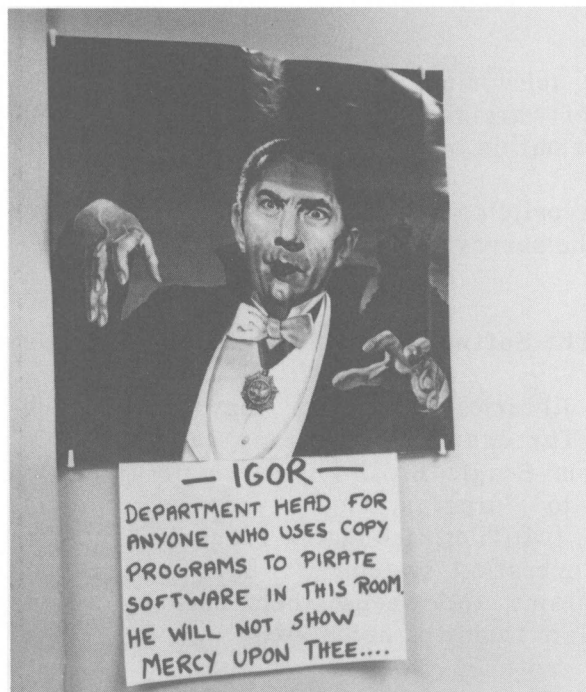
Eighteen libraries said that they also collect "utility" software. The example the survey gave was *DOS Boss* and others from Beagle Bros. These are programs which allow you to do "programming" types of things, such as comparing two files, debugging programs, and working with the disk operating system. We have a large collection of these programs, and we use them in-house all the time. We also circulate them for home use.

But there is another type of utility, which no library mentioned by name: the copy program. Libraries all own at least one--the COPYA program that resides on the system master disk that came with their disk drive. The copy program Apple gives you is fine for copying unprotected files, such as those created on a word processor. It won't touch a protected piece of software, however.

### *Copyright and Libraries*

Copyright law allows the owner of a computer program to make an "archival copy." This copy has to be archival, though; you couldn't make ten copies of *AppleWorks*, for example, so that all your department heads could have one.

Some software comes with so-called "shrink wrap licensing." These are the ones with the fine-print contract showing through the plastic, and the prominent notice: "By breaking this seal, you have agreed to the following conditions:". Lawyers do not agree on the validity of these types of contracts. Large software companies have, in fact, brought suits against other large companies over them. These cases have been settled out of court.



*"Igor" warns patrons of the consequences of copying software.*

We try not to buy software with "end-user agreements." If we do so inadvertently, the software is put into our reference collection and is not circulated.

Our legal counsel asked us to post "No Piracy" signs on or nearby the public computers, somewhat like the signs around the photocopiers. Further, on every piece of circulating software, we have a sticker that begins "Software piracy is a crime!" and goes on to detail federal penalties. Also, into every bag goes a "Thou Shalt Not Dupe" pamphlet from ADAPSO (see address in back of book). We even put up a large poster of Dracula, renamed "Igor--Department Head in Charge of Patrons Caught Copying Software on Library Equipment--he will not show mercy upon thee!!!" Copy programs are not allowed in the public computer lab, and there is a policy that patrons using them will have their computer room privileges revoked for three months.

*Back-up Copies*

Public law allows you to make one archival copy, if you can. Copy programs abound, but one of the best is *Copy II Plus*, by Central Point Software. There are many useful utilities on it. There is a very fast copy program for unprotected files, disk, or DOS. There is a file renaming utility, a lost file recovery option, disk mapping, and a file viewing feature that we use all the time with our electronic bulletin board. There is also a substantial bit copy routine, which will try to get you a back-up copy of your protected software. In fact, your program is probably listed in the file of back-up parameter settings; just choose your program's name and let the copier do its work. This method is not foolproof. It doesn't work all the time, but it is probably worth running your purchases through it once or twice to try and get your archival copy.

In the old days, we spent a lot of time trying to make a back-up of all our disks. In recent times, however, this has not proven cost-effective. For one thing, we circulate software for computers we don't even own, so we have no way of trying to make a back-up. Second, only about one in a hundred disks is damaged anyway, and we can send the dead disk back to the publisher, who will send us a new one for a nominal fee. Third, quite a few disks come with their own back-up copies, so we are never disk-less for long.

There is a slight trend away from copy protecting software now, and publishers may eventually give it up altogether. Site-licensing, which gives the purchaser permission to make as many copies as his or her site requires, is becoming more readily available from publishers. Sometimes publishers have educational packages, with, say, ten copies of the software, one teacher's manual, and multiple student guides.

**BYOS: Bring Your Own Software**

Several libraries mentioned that although their software holdings are small, their public computer still receives

maximum use, as patrons bring in their own software. Everyone can afford a disk or two, but not everyone can afford the equipment to run it on.

There are a couple of problems that can arise from this. First, equipment and software are often incompatible. A patron may own something which requires two drives, and the library only has one. Or, the person's software may work only with a specific type of Apple or printer. Usually these differences will not cause damage to library equipment. Second, there is the problem of pornographic or other objectionable software. Yes, some patrons do try to bring in their copies of *Strip Poker* to try to dump the pictures to the printer. Or there are the gambling games, or even the bit copier programs. Your best defense against this sort of thing is a posted policy and eternal vigilance. If you can only manage the posted policy, so be it.

While we are on the subject of patrons bringing in their own software, let me mention another policy we found necessary. Patrons should not be allowed to bring in hardware to attach to library equipment. We have had offers of extra disk drives, memory cards, printers, and cassette players. Librarians cannot tear down equipment every time a patron wishes to attach a second disk drive. Further, some of these so-called "memory cards" are in reality copy cards, which take a picture of the program in memory and then try to write it out to a blank disk. Again, your best defense is not to allow the practice in the first place.

### **Are Library Software Collections Biased?**

When asked about this, twenty-six libraries thought that their collection was fairly well balanced, although many of them said this was hard to do because of the dearth of good software at all age levels. Six admitted to a preschool bias, while another eight said that theirs was basically a juvenile collection. Six libraries reported a bias toward high school-aged and adult applications, one specialized in business programs, and another's collection was mostly of

public domain software. Three libraries said that their collection development was largely based on public demand.

At Liverpool, we are also strongly influenced by what patrons demand, too. We find that they want software for preschoolers, they want adventure games, and they want a variety of word processors to try. The first question we ask someone who complains about the state of the current holdings is: "What would you like us to consider buying?" We have gotten some very fine suggestions this way.

### **How Libraries Select and Buy Software**

The survey responses were evenly divided when it came to where most libraries purchase their software. Just as many use mail order as those who buy from local dealers. Many mail order companies will let you order titles on approval, but sometimes the discount is not very much. Other mail order companies give great discounts, but do not let you preview software.

We buy most of our software locally, where we can ask our dealer to order things for us on preview. Then we use the titles in the store and make our selections based on first-hand knowledge. Also, dealers are a great source of demo disks, which offer a sampling of a program, often replete with data to sort or word-processing files to edit. Often, these demo disks can be kept and may help you increase your software collection. Some software publishers will also send you free disks with samplers of their products on them. We bought *Infocom Sampler* disks, which let you try several different Infocom adventure games. These disks are very popular and very inexpensive.

### **Review Sources**

Although over forty librarians reported that they frequently select software by looking at it themselves, the majority rely mainly on reviews for their collection development. Other "review" sources mentioned were the recommendations of users' groups, teachers, and patrons.

Other librarians kept a careful watch on such software best seller lists as the one in *Billboard* and then selected accordingly. Most librarians surveyed used a variety of methods to help them find good software.

Librarians were asked to name their favorite review sources from the popular computer press and the library professional journals. Of the popular magazines, the far-and-away winner was *Creative Computing*, which unfortunately ceased publication last year. So did *Popular Computing*, which also garnered a measure of positive votes. Those magazines remaining were, in order of popularity, *Personal Computing*, *A+*, *Family Computing*, *InfoWorld*, *Byte*, *Nibble*, *InCider*, and *Call Apple*. A few librarians who apparently hadn't caught on that they were being surveyed for an Apple book listed *PC*, *PC Tech Journal*, and *PC World*. Addresses and publisher information for these magazines are all in the back of the book.

Library professional journals offer software reviews more and more. The most frequently mentioned source was *Booklist*, which reviews software once a month. Next popular was Patrick Dewey's column in *Wilson Library Bulletin*, which appears in every issue and usually features four or five titles. *Small Computers in Libraries*, *Library Journal*, and *School Library Journal* were tied, only one vote behind *Wilson*. Back in the pack were *Library Software Review* and *Voice of Youth Advocates (VOYA)*.

Several librarians complained that the software reviews in library literature were useless to anyone who buys a lot of software. By the time a review is published, the software has already been in the library for six months. Professional journals were slow in adding reviews of microcomputer software to their pages, and their first tentative steps were inarguably dated. Now that reviews are more frequent, and more journals publish them, this criticism has become less valid.

### What Makes a Good Program?

A good piece of software should, first of all, be easy to operate. Try not reading the manual first, booting the program, and seeing how far you can get. This is what your patrons will do--no one likes to read manuals unless absolutely necessary. Are there "help screens" available within the software?

Is the program error-trapped? What happens if you press all the wrong keys at the wrong time? The program may hang, or bomb out, or it may go on as if nothing has happened. It seems to be a rule that no one can ever remember exactly what he asked the computer to do immediately before the program locked up. But the librarian is nonetheless expected to fix the problem, not knowing what has gone wrong. An error-trapped program can save you a lot of grief!

Take a look at the manual: you will be seeing a lot of it, even if your patrons won't. Is it written in real English, or is it full of jargon you don't understand? Is it indexed? Can you look up "PRINTERS" or do you have to try something esoteric, like "INPUT/OUTPUT DEVICES"? Are there plenty of illustrations, pictures of computer screens, or reproductions of printouts? Sometimes scanning these illustrations can save time when searching for the solution to a patron's problem.

Will the program run on your hardware? Check for system requirements, such as minimum memory, multiple disk drives, color monitors, supported printers, and other peripherals. This is getting even more complex now, as "flippy" disks are being published. A "flippy" has software for, say, Atari on one side, and Commodore on the back. I have also seen Apple/IBM flippies. This type of software lets you double the user base for one purchase and also keeps cataloging interesting!

Is the program copy protected? Is there an end-user agreement? Can back-up copies be purchased from the publisher? If the program is destroyed, can you get a replacement copy for a nominal fee? A careful reading of



the back pages of the manual will usually answer these questions.

How many of your patrons will benefit from this program? An exotic program may be the greatest software ever written, but if it doesn't fit into your collection, no one will need to use it.

Some programs won't fit into the public-access situation for one reason or another. They may be too hard to use, for example. Our library owns *Fontrix*, which we refer to as "the poor man's Mac." It lets you do page composition in a variety of fonts, and dress up the page with borders, lines, and other graphics. The problem is that, although we find many uses for it in-house, we would never consider putting it in the lab for public use. It's just too complicated, no one would have the patience to work with it properly. One library did list *Fontrix* in its "no one ever uses" category.

Other programs may be too noisy and distracting for others. Check to see if there is a way to turn the sound on/off within the program. Many pieces of educational software have this option.

Does the program run very slowly? Is there a lot of disk access, which makes the run time interminable? Will your patrons be able to take a quick nap while this software is thinking? We have a saying in the computer lab that you spend half your life waiting for disk drives, and the other half waiting for printers. Adventure games usually take a long time to complete. The patron will not be able to finish the game in one sitting. Can the game be saved in progress? If so, does the patron need his own disk, or can the game be saved to its own disk? The problem with the latter is that one patron can save their game, and then the next patron comes in, uses the software, and saves their game right on top of the first. The first game has been destroyed, and the first patron will either have to start from scratch, or settle for playing from where the second patron left off.

Some adventures let the user create a character with attributes such as strength, piety, luck, and gold. A roster of available characters is saved on the disk. Anyone can use the software and play with anyone else's character, unless the character has been given a name with an invisible control symbol embedded in it. Only the original user knows this "password protection," of a sort. The problem comes in when the disk is full of characters and patrons want the roster cleared so that more can be created. Try to find the password to delete some of these "protected" characters! You may wind up having to make all-new "scenario" disks periodically, just to combat this problem.

### **Titles of Popular Disks**

The following titles were mentioned by librarians answering the question, "What are the most popular disks in your collection?" Many of them are listed in the "Core List" section of this book, with publisher and other information.

*Acewriter II*  
*Algebra Arcade*  
*Alien Addition*  
*Alphabet Zoo*  
*Anything by Infocom*  
*Apple Education Classics*  
*Apple Presents Apple*  
*AppleWorks*  
*AppleWriter*  
*Bank Street Writer*  
*Biorhythms*  
*Chivalry*  
*Dinosaur Dig*  
*Dragon's Keep*  
*Eamon Adventures*  
*Facemaker*  
*Fat City*  
*Flight Simulator II*  
*Gertrude's Puzzles*  
*HomeWord*  
*Kindercomp*

*Know Your Apple*  
*Loderunner*  
*LOGO*  
*Magic Cave*  
*Magic Slate*  
*Magic Spells*  
*Magic Window*  
*Mastertype*  
*Math Blaster*  
*Microtype Paws*  
*Microzine*  
*Minus Mission*  
*Mix and Match Ernie's Quiz*  
*Moptown Hotel*  
*Muppet Learning Keys*  
*Newsroom*  
*Odyssey*  
*PFS:File*  
*PFS:Report*  
*PFS:Write*  
*Print Shop*  
*Public domain software*  
*Robot Odyssey I*  
*Rocky's Boots*  
*Sargon*  
*Snooper Troops*  
*Snoopy to the Rescue*  
*Spellacopter*  
*Spotlight*  
*Stickybear ABC, Numbers, Shapes, Opposites*  
*The New Step By Step*  
*Tonk in the Land of Buddy-bots*  
*T.Rex*  
*Trivia Fever*  
*Typing Tutor*  
*Ultima II*  
*VisiCalc*  
*Where in the World is Carmen SanDiego?*  
*Wilderness*  
*Wizard of Words*  
*Wizardry*  
*Word Attack*  
*Word Juggler*  
*Zork series*

### Programs That Have Not Been Well Received in Public Computing

The following titles were mentioned by librarians responding to the question, "What software is hardly ever or never used by your patrons?"

An asterisk means that the title was named in both the often-used and never-used lists.

*Ace Calc*  
*Alphabet Zoo \**  
 Any educational game without graphics  
 Any spreadsheet  
 Anything that says "Math Fun" or "Word Games"  
*Apple LOGO II \**  
*AppleWriter II \**  
*Bank Street Writer \**  
*Barron's SAT*  
*BASIC*  
*Bridge*  
*Bridge Tutor*  
*C-Dex Training for VisiCalc*  
*Chess*  
*Clock*  
*College Financial Advisor*  
*Cooperation Maze*  
*DB Master*  
*Delta Drawing*  
*DOS*  
*Easy Writer*  
*Eating Machine*  
 Educational games  
 Energy packages  
*Financial Analysis*  
*Flight Simulator \**  
*Fontrix*  
 Foreign language programs  
*Fortran*  
*Funhouse Maze*  
*Home Accountant*

*HomeWord \**  
*Le Investor*  
MECC disks that are non-game oriented  
*Microzine \**  
*Milliken Math Series*  
*Millionaire*  
*Missing Links*  
*Nutrition*  
*Ortho Gardening*  
*Pascal*  
*PFS: File \**  
*PFS: Graph*  
*PFS: Report \**  
Public domain software \*  
Scholastic Aptitude Test tutorials  
*Statistics*  
*Stickybear Bop*  
*Storytree*  
*System Master Disk*  
*Tax Manager*  
*The Pond*  
*Think Tank*  
*Typing Tutor \**  
Utility disks  
*VisiCalc \**  
*Visifile*  
*Visitrend*

The programs listed above are not necessarily "bad." Some programs suffer because they take too long to use. For example, our SAT software was never used in the public lab, as it took over three hours to complete. After we placed it in the circulating collection, we found that we had to add SAT software for other types of computers; it became a very popular title to take home.

Other programs are too complicated for patrons to use in the short time period we give them, or the library support is not adequate enough. A word processor will be unused until a library buys a printer.

Other programs suffer from lack of promotion. Pre-school software will not be used in a library primarily in a

neighborhood of senior citizens (that is, until someone promotes the idea of bringing the grandchildren to the library computer lab). The college financial advisor will not move until the local guidance counsellors know we have it and we promote it to parents.

Some good programs have just "gone stale" due to the newer, brighter titles we have added to our collections. The earlier programs are perfectly good; maybe someone could set up a national software exchange for orphaned library software. Even a regional library system might consider such an exchange project.



## **MANAGEMENT AND ARRANGEMENT OF PUBLIC SOFTWARE COLLECTIONS**

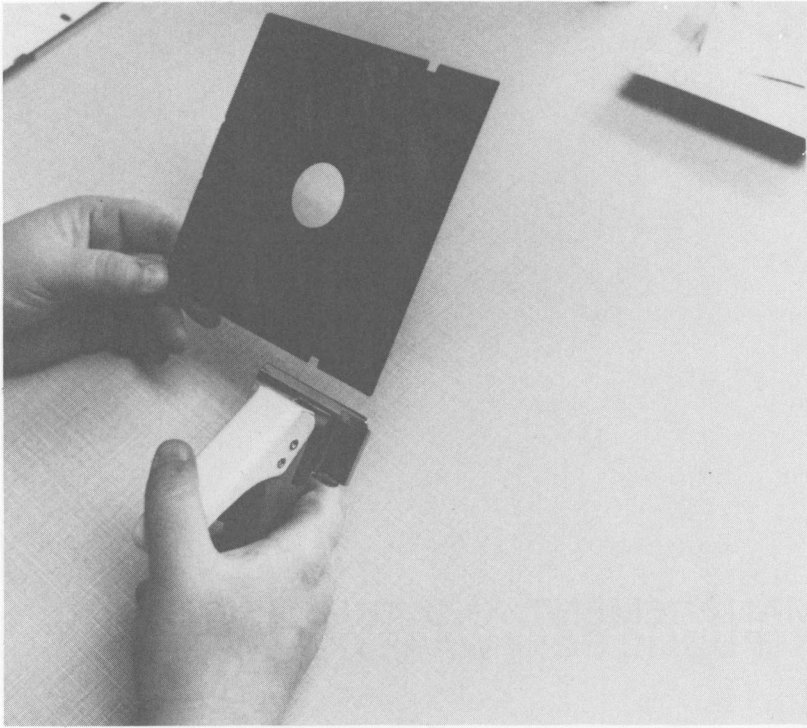
In the survey, librarians reported the following problems with public-access software.

Disks are tougher than we think, but they cannot stand up to smears of peanut butter. No eating or drinking should be allowed in the computer room for this reason. (A mother asked me if this included nursing her baby! All things considered, we decided it did.)

### **Software Vandalism**

One librarian complained that "crude program names" were saved to disk. This is a problem with any software that can be written to by the disk drive. The use of foil or tape write-protect tabs over the "write-enable" notch of the floppy disk may thwart some abusers, but not all.





*"Nibble-notcher" is used to create extra notch.*

Some of our vandalism has occurred when "nibble notchers" have been used. These are specialized hole punchers which create a square hole not unlike the notch normally found on a floppy disk. They sell for about \$10. A garden-variety floppy disk can supposedly only save information on one side, on what we think of as the back --the side without the label. A diskette has one notch, usually in the upper left-hand corner, the presence of which allows the disk to be written to. If the notch is covered up, the disk is "write-protected." If a patron notches a hole in the opposite side of the disk, side two can then be written on. Some commercial programs have their "boot side" on side two, meaning that you have to put that side in first to load the program. Typically, these "side-two boot" disks do not have side-two notches. The information has been written to disk with a special drive that overrides the lack of the write-enable notch.

A patron interested in software piracy often gets the terms "write protection," "copy-protected," and "copyrighted" mixed up. This type of patron thinks that if the write-protect notch is uncovered, the disk may be copied. This patron will go to great lengths to pull off any tape or foil tabs you may have placed over the write-enable notch. He may even try to de-write-protect your side two by nibble-notching it himself. Of course, this doesn't do anything to disable any copy protection the publisher may have placed on the disk. What it does do is allow the disk to be destroyed, which is the next thing this type of patron will usually do in his attempts to pirate the diskette.

Librarians have no defense against this type of vandalism. When bogus or obscene program names or programs are saved to our disks, we just go into the disk and remove them. Unfortunately, we usually don't spot them ourselves; patrons point them out to us.

### *Worms and Trojan Horses*

Another librarian reported a "Trojan horse" was left in her copy of *Print Shop* by a disgruntled patron. The next time the disk was run, it erased itself. Other librarians have found problems with patrons erasing disks either on purpose or by mistake.

One might try to solve the problem of "honest mistake" erasures by placing tabs over the write-enable notches. Alas, some software will not run properly unless these notches are sensed to be open. Anything that writes a high score to disk, for example, needs the notch open or the program will crash. *AppleWorks* itself requires the same thing.

One young patron was so enamored of one of our programs that he spent his whole computer time peeling off the original disk name label. Then he restuck the label on one of his own blank disks. We didn't discover it until another patron reported our disk as faulty a couple of hours later. We were able to trace this back to the guilty

patron, but by the time we caught up to him, he admitted that the disk had subsequently been "stolen" from him!

### Poor Instruction Manuals

Yet another problem librarians universally lamented over is insufficient documentation. Librarians find themselves explaining programs to patrons because the manuals are not clear enough, or are too large and forbidding to entice patrons to consult them. Many of us have even written our own short manuals to be used with frequently requested software. And many libraries have found it necessary to curtail patron questions by posting notices such as, "We regret that the library staff cannot answer specific questions on software use, or debug your programs."

Our library policy states:

The Microcomputer Department Staff is happy to help you solve hardware problems. Sometimes we can get a stubborn disk to work, or fix a balky printer ribbon.

The Library owns over 300 software titles and is constantly adding to the collection. The computer lab staff knows basically what each disk does, but we do NOT know the fine points of every program. It is your responsibility to read the instructions in the manuals. Most problems are caused by user error. We cannot debug entire programs you have written.

If you would like assistance in developing a database or word-processing application, please make an appointment, in advance, with someone in the computer lab. We are sorry to be unable to provide this personalized service without a prior appointment.

The Fort Collins Public Library in Colorado has a similar disclaimer in its user information: "While the library staff is available for your general questions regarding this service, they are not available for instructing you. This microcomputer service is self-instructional."

The Oaklyn Branch of the Evansville-Vanderburgh County Public Library in Evansville, Indiana, puts it this way:

The Library staff will give a short orientation to first-time users and lend assistance when possible. However, our role is one of guidance, rather than instruction. We recommend that you view the introductory disks, *Apple Presents...Apple...* sometime during the first few times you use the computer.

Some of these endless questions may be eliminated by looking at the user manuals before buying the software. While this is not always possible, it may be possible to consult other libraries on the "user friendliness" of various titles being considered for purchase.

### **Software Packaging and Librarian Repackaging**

Long ago, software was known by its distinctive packaging. Whether the disks were housed in a high-tech frisbee or another outsized container was anyone's guess. Since the advent of software sales through booksellers, a hue and cry has been raised to standardize software packaging--to make the sizes more closely resemble a book. The variation in book sizes notwithstanding, software publishers seem to have paid some attention to the plight of booksellers and librarians alike.

Many librarians use the software packaging just as it comes from the store. Others go to great lengths to repackage the diskettes and the documentation. At Liverpool, there are two different tracks any piece of software may take depending on whether it will be a reference copy or a circulating title. Both tracks are similar, as we frequently take older software from the reference collection and make it part of the circulating collection. We don't want to make massive changes in the packaging when we do this.

### *Repackaging Software for Circulation*

After the software has been cataloged (more on this later in this chapter), the diskette is removed and placed in a "compact diskette carrier," which has hard sides and can accommodate up to three diskettes. The diskette carrier is labelled with the title of the software on the front and on the spine. The copy number is also placed in these locations, as we buy multiple copies of popular titles. Cataloging information is typed on a label affixed to the upper-left corner of the diskette carrier's face. A typical one might read:

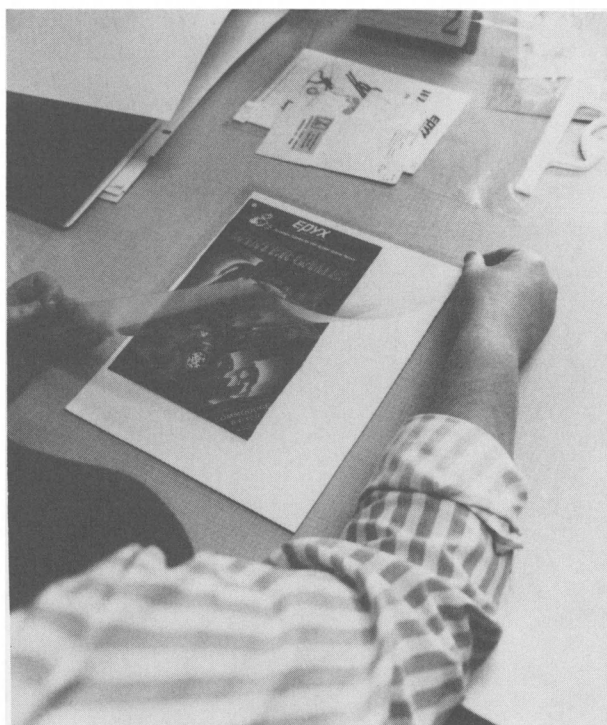
SOFTWARE  
747  
F  
2 disks  
1 insert  
1 workbook  
(Apple)

Also, we put a color-coded dot on the spine and face of the carrier. This is a further visual cue as to what computer the software works on.

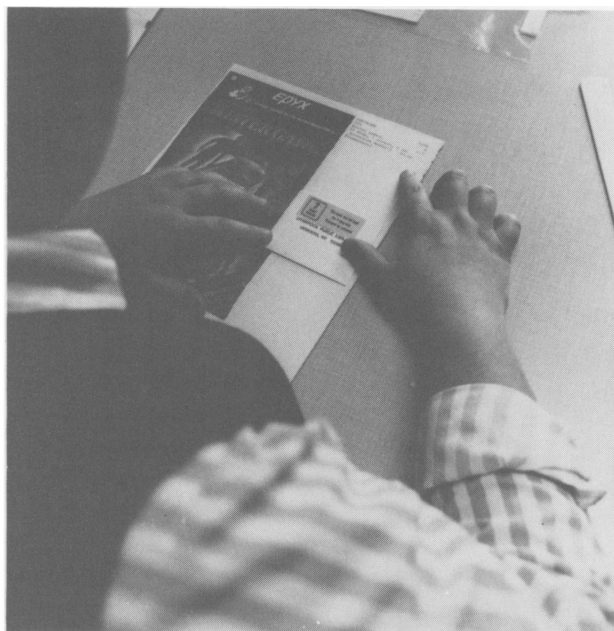
The diskette itself bears an ownership label, a color-code dot, and a copy number. The diskette sleeve also has an ownership label, but rarely does the original sleeve return with the diskette. Sleeves have a way of getting lost, or mixed-up with the patron's own diskettes at home. Sometimes, the disks return with no sleeve at all. We stock a supply of extra sleeves for these occasions.



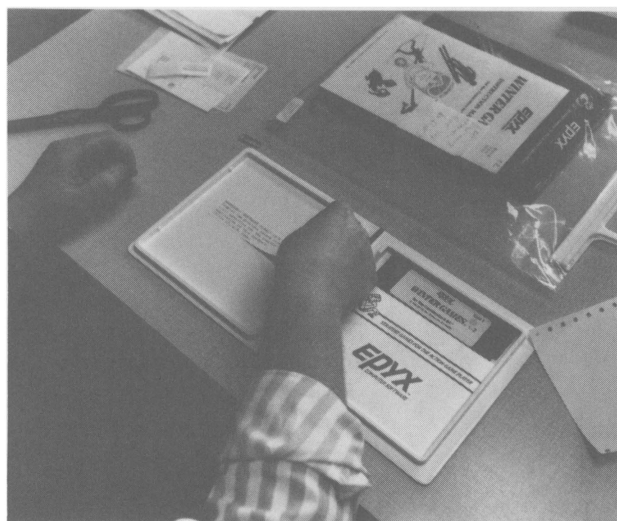
*Figure 1. Software processor Cheryl Cornell takes a commercial package apart as the first step in preparing software to circulate.*



*Figure 2. Laminating the box panels to heavy cardboard*



*Figure 3. Installing the pocket*



*Figure 4. Warning sticker concerning copyright law is affixed to the diskette carrier.*

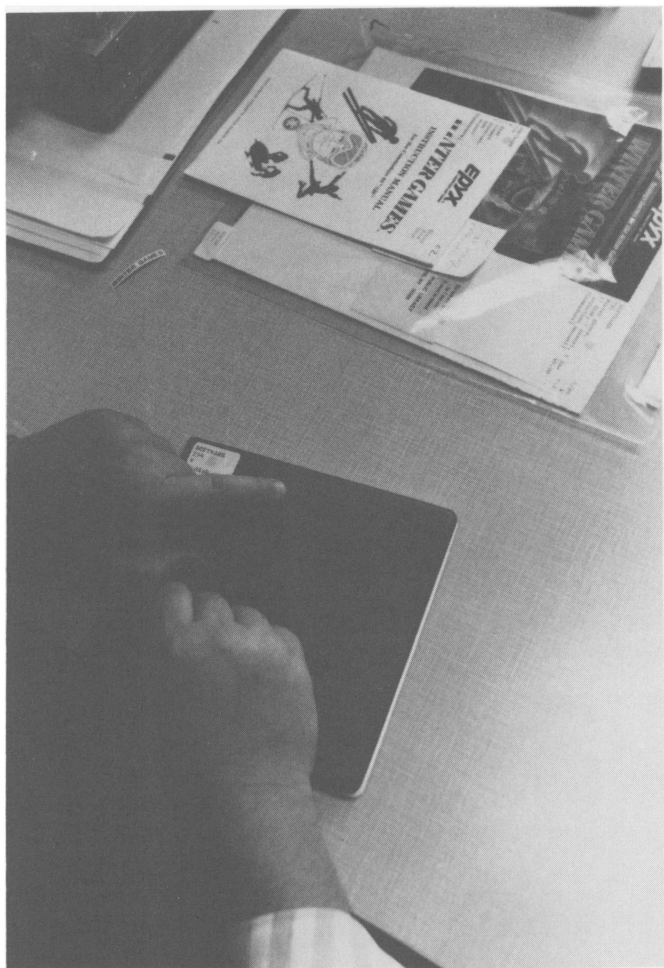


*Figure 5. Warning sticker concerning copyright law is affixed to the diskette.*



*Figure 6. Labels on the outside of the diskette carrier include a color-coded dot to indicate on what computer the software runs.*





*Figure 7. A title label is placed on the front and the spine of the diskette carrier. The entire package goes in the plastic hang-up bag.*

We affix one more label on the diskette, and an identical one inside the carrier. It reads:

**WARNING--SOFTWARE PIRACY IS A CRIME!**  
Federal law provides severe criminal and civil penalties for the unauthorized duplication of this software. (Title 17, U.S. Code)

The labels are printed in-house, using a red ribbon cartridge.

The rest of the software package is evaluated next. Recently, some packaging has included its own hard-shell box, or very heavy cardboard folder. We try to use these as the main package insert on which the book pocket will be placed. The zebra label for our computerized circulation system goes on the book pocket. The top of the book pocket has all the cataloging information on it. It looks like this:

SOFTWARE	color dot	accession date
Dewey #		Cutter
Author		
Title		copy #
(# of disks, package contents)		
(Computer type)		price

The package contents notes are frequently lengthy. This information is used to collate the contents of each package when it is returned. Every item in the package is also given its own label with the Dewey/Cutter number, the copy number, and the complete list of package contents, as well as a color dot. If the label is on the *Sorcerer's Infotater*, for example, that item name is underlined in red pen on that contents label. This way, whoever is checking the software doesn't have to guess which item is the "command card," which one is the "reference template," and which one is the "Infotater."

In practice, it looks like this:

```

SOFTWARE
747
F
2 disks, 1 insert, 1 workbook, 1 instructions
book, 1 command card, 2 layout cards.
```

This label would be the one found on the command card. Each piece in the package would have a similar label, with different names underlined. While this may seem like extra work, it pays off when one of the following things happens. A package is returned, and one piece of documentation is missing. By the process of elimination, the labels are checked, and the missing piece's name is revealed. The patron is called and asked to return "the command card" rather than "one of the things in the software package." Then the library closes for the night, and the patron drops off the command card in the bookdrop, with no note. The loose documentation can be quickly reunited with its accompanying pieces, as long as the Dewey label and computer type color dot are on the stray piece.

With a circulating software collection as large as ours (over 300 titles) we have frequent "snags," meaning items returned without diskettes, or with incomplete documentation. We may have snags for the same title in two different computer formats. These wait on our shelf for items to be returned by the patrons, who are phoned when such anomalies occur. Labeling all the package contents has saved us on many occasions.

Another thing which has saved us a number of times is our practice of photocopying all documentation. For each title received, a file folder exists, containing copies of command cards, user manuals, and other instructions. The only things we do not photocopy are the extremely long book-type manuals with good bindings. If the manual is long but loose-leaf, we make a judgment on whether to photocopy the whole thing or not. We also don't bother copying identical instructions if we buy a title for several different computers. Usually, the manuals are all the same, and one copy is sufficient. When a patron admits to losing the user manual, or that a dog ate the reference card, we can replace the lost item from our store of photocopies. This practice does take a lot of file space, though, and it may not be cost-effective for all libraries. It does work well for us.

Sometimes, the package box is not rugged enough to withstand the rigors of circulation. At that point, we disassemble the box and arrange its pieces on heavy illustration board. The front of the box is placed on the face of the board, while the back and any important information salvaged from the sides (such as ISBN) is placed on the verso. The whole thing is then laminated, and the book pocket and zebra label are taped to the front-right corner of the newly created "insert."

All package contents, except the diskette carrier, are then placed into a clear plastic hang-up bag. The bags receive only an ownership label. All the title and cataloging information may be seen through the bag, so it would be redundant to place the information on the bag as well. Besides, the bags eventually wear out and must be replaced: putting all the package contents into a new one is a very quick fix.

At this point we insert a bright, yellow flyer, which reads:

A Microcomputer Department staff member has checked the software package and found it to be complete. A list of the components included is on the pocket. Please check to make sure that you return ALL of the items listed. Software can only be returned to the Liverpool Public Library during normal open hours: do not place software in bookdrops or return to any other library. Diskettes will warp in the sun or in hot cars: treat them carefully.

If you have problems using the software, make sure that your hardware is compatible. 128K programs will not run on 64K machines. Some programs require color cards, multiple disk drives, or other equipment. Read the instruction manual for this information. If you do find that the software is inoperative, please report it to the returns desk staff, so that it can be checked.

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### Fines:

Software not returned... full replacement cost.

Disk or manual or other item not returned ... 1/2  
full replacement cost.

Overdue items are fined .05 per day.

The completed hang-up bags are placed on the circulating software racks. They are divided into the types of computers they operate on, and are further arranged by Dewey number. The compact diskette carriers are placed behind the circulation desk, in title order. The patrons select the software they want from the hang-up racks, and take the bag and the documentation to the circulation desk, where the diskette carrier is added to the bag as the patron checks out.



*The hang-up bags are left for the public to peruse. The diskette carriers are behind the circulation desk.*

At the circulation desk, everyone has to be careful that the Atari copy 1 disk goes in the Atari copy 1 bag. A popular title, such as *Wishbringer*, an adventure game, may be owned in five different formats, and there may be multiple copies within those formats. The color-coded dots and the copy labelling on both the spine and the face of the carrier help reduce the chance of error.

### *Other Ways of Preparing Software to Circulate*

Of the eleven libraries in the survey that do circulate software, about half of them repackage it. Some take everything apart and reprocess it into a three-ring notebook. Others use a vinyl page, with room for several diskettes in the small front pocket, and room for accompanying documentation in the large back pocket. This type of page is made to go into a notebook, but some libraries use it alone and find that the protection is adequate. Some libraries just circulate the software in its original package, while others place the original package in a plastic hang-up bag.

### **Problems with Circulating Collections**

The problems mentioned above, vandalism and missing pieces, were echoed by the libraries surveyed. Although the majority of librarians thought that the software held up as well as any book in circulation, they agreed that there were some problems. As one librarian put it, "diskettes are tempermental, while book print rarely disappears from the page!"

Most libraries do not check every disk, or even the package contents, when it comes back, relying instead on patrons to report problems. One librarian recommended circulating only cartridge-based software, as it holds up well and is difficult to destroy.

When a diskette is ruined, either through patron error, mechanical failure, or intentional abuse, libraries charge

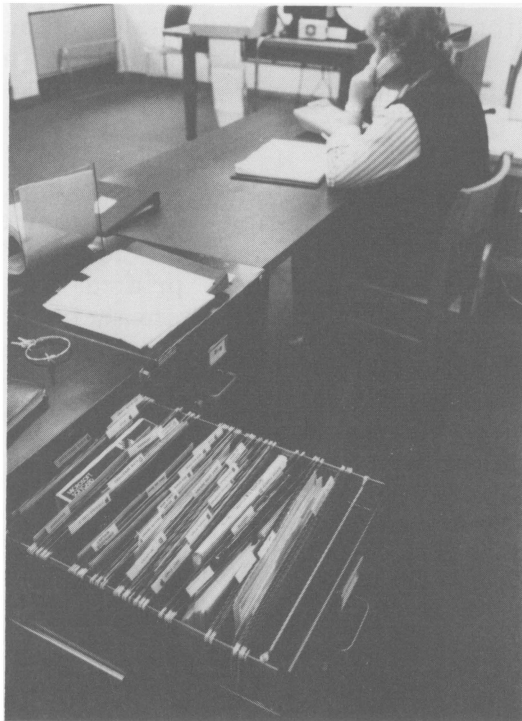
the patron anything from full replacement cost to a flat fee of \$5 per disk.

Replacement diskettes are then acquired in one of several ways. If the program was copied and archived, a new copy is made back onto the damaged diskette, if possible. In the case of a pen-point pushed through the original diskette, this method will not restore the program. If a program was purchased with a back-up copy, the back-up copy replaces the original. Otherwise, the diskette usually is shipped back to the publisher with a note of explanation and a request for a new disk. I have found that some publishers replace these disks *gratis*, their "send \$5 for a new disk" notices in the manual notwithstanding. The worst that can happen is that you will get a new disk back with an invoice attached. Replacement disk costs vary, but they are usually in the \$5-\$15 range.

### Packaging Software for Reference Collections

At my library, the reference software goes through repackaging similar to the circulating collection. The difference is that we do not use the compact diskette carriers or the hang-up bags. We use the vinyl notebook pages mentioned earlier, although they are not placed in notebooks. The pages hold two diskettes, and the back pocket holds a substantial amount of documentation. The diskettes are stored in hanging files, alphabetically by title. The software must be retrieved by the computer room attendant, who pulls the book card from the book pocket and attaches it to the patron's library card. The card is held until the software is returned to the computer desk.

Libraries have found many different methods to physically arrange software collections. Almost universally, the diskettes are kept out of public reach. Some libraries keep the diskettes on a shelf behind the Reference/Circulation/Department/Juvenile Desk. Several libraries put the boxes and manuals out on the browsing shelves, while the disks are kept behind the desk. Others put the disks in storage cases and file the boxes in a cabinet. Filing disks alphabetically by title, in a notebook



*Reference software storage is by title. Individual vinyl sleeves are used to house the disks and documentation.*



format, had its fans, as did a title file inside a locked case. A shoebox worked well for one librarian's disks.

Some librarians arrange their collections in broad subject areas first and then alphabetically by title. Some of these areas would be "business," "word processing," "education," "games," etc.

One library's software is first broken down into what computer format is used, such as "Apple," "IBM," and "Atari." Then it is stored alphabetically by title.

### **What about Cataloging and Subject Access?**

Only one library in the survey stored its disks in Dewey Decimal Classification order, inside file folders.

Twelve libraries said that they cataloged their software just as they catalog their books, while the majority of respondents, forty-one strong, said that they do not catalog software at all.

The most popular method of "cataloging" is to use some variation on the accession number theme. Software received is given a number. Access to this number is usually gained through use of a printed list of subject headings. Some librarians also annotate their lists. The lists may be posted nearby the computer, or available at the desk. One library files their software subject headings in the card catalog, with the accession number of the disk listed on the card.

The subject headings lists are quite often kept current with the use of a word processing program or a database management program. At my library, even though all the software is fully traced and cataloged, we still hang on to our printed title lists. The full list approaches upwards of thirty-five pages now, and we toy with the idea of discarding it altogether, forcing people to use the card catalog. But our catalog subject tracings do not include tracings for the type of computer the software runs on,

and we do provide a sorted list of, say, all the titles which run on an Apple, or all the ones which run on an IBM.

We use *AppleWorks*' database for this task. Unfortunately, the *AppleWorks* "desktop" space is only 55K for a 128K Apple IIe, so we had to divide up our holdings database into the Apple holdings, the IBM holdings, the Atari holdings, etc. Our template for the database looks like this:

Computer type: Apple  
Models it works on: II+/IIe  
Media: 5 1/4" disk (or cartridge, or 3 1/2" disk)  
Title: Carrying./Regrouping for addition.  
Author:  
Publisher: Renaissance Learning Systems  
Reference copies: 0 Circulating copies: 1  
Type: Education  
Annotation: Part of the Guildmaster Adventures with Whole Numbers series. "Teacher's Edition."  
Suggested age group: 6-10  
System requirements: DOS 3.3, 64K.

All this information, and more, appears on the catalog cards, but people still seem to want to search for titles in our printouts. The nice thing about the database is that we can print a "reference holdings" list and a "circulating holdings" list, and sort or search by type of computer, age group, or any of the other fields. A word processing program would not have the sort and search capabilities of the database, but it might make your final printout look better. Of course, if you are using *AppleWorks*, you can have the best of both worlds. Use the database to store and manipulate the information, print the whole thing to the *AppleWorks* clipboard, then paste it all into a word processing file to get your final printout the way you require it. Integrated software--what a concept!

Other libraries use similar templates to create their lists. Additional information sometimes added: skills taught, number of disks, description of manuals.

One library color-coded each of its disks to denote its subject area, then added a printed info sheet about the program. Another library prints out the menus of each diskette's available programs and has the menus posted on the computer room door.

Another library found the following method to be a success. A title holdings list is printed, sorted alphabetically by subject heading. Another is printed, sorted numerically by age group. A third, sorted by title, includes program descriptions. All three lists are then placed into a notebook for patrons to consult.

A variation on the accession number theme was developed by one librarian. Disks are given a three-digit number, with the first number assigning it to a larger subject area. For example, 200 might be education, 300 might be business. The next two digits are strictly chronological accessions. Both title and numerical lists are printed for patron use. This type of system probably works very well, until you get over ninety-nine titles in one subject area and you run out of numbers. But most of us never think that our software collections will get that big.

Several librarians said that they did not see the point in cataloging and classifying their software, as there just wasn't enough of it to bother with. Time constraints weigh heavily on all of us. At what point, though, do we draw the line? How many disks do we have to own before we feel that we must catalog (or at least classify) them? Usually, there is only one person per library who really knows what's in the software, and can do "user's advisory" services with the collection. What happens when this person goes on vacation or takes another job? The patron is left with no finding aids, and the rest of the library staff has to start from the beginning again.

When our software collection was small, we arranged it by large subject areas and then alphabetically by title. We also printed a title list so patrons could tell what we owned. We collected actively, and soon the large subject divisions became unwieldy. Only I really knew if I had filed a program under "EDUCATION" or "GAME," and other

librarians had to find software for patrons, too. So, we went to one huge title arrangement. Immediately, it was much easier to find a particular disk. By then, people were clamoring to have a circulating software collection, and we could see the spectre of retrospective cataloging looming on the horizon. If you think you don't have time to catalog now, wait until you have 100 titles and have to go back and catalog everything later. I was lucky enough to get two student interns from the local library school, and the three of us tackled the problem.

### Are There Really Any Guidelines?

Well, there didn't used to be. I am a firm believer that software should be mainstreamed as much as possible into the traditional library collection. Computer folks deserve full cataloging and classification, too. Librarians still seem so overwhelmed by the form of computer media that they forget their cataloging skills.

Fortunately, there are several books out now to help the neophyte software cataloger. One of the first was Nancy B. Olson's *A Manual of AACR 2 Examples for Microcomputer Software and Video Games* (Lake Crystal, MN: Soldier Creek Press, 1983). Her excellent suggestions were very helpful to us.

By mid-1984, ALA's Committee on Cataloging: Description and Access had come out with *Guidelines for Using AACR2: Chapter 9 for Cataloging Microcomputer Software*. This small pamphlet, available from ALA for \$5, is the text all libraries cataloging software should have. Although some of us would like to consider it a "work in progress," it is the best we have now. Our library uses a version of these guidelines, adapted to our own local options.

A 1985 publication by Sue A. Dodd and Ann M. Sandberg-Fox is also an excellent source. *Cataloging Microcomputer Files: A Manual of Interpretation for AACR2* is also published by the American Library Association.

### A Local Version of Cataloging Software

We use ALA's *Guidelines: Chapter 9*. We don't do everything suggested there. Basically, we try to mainstream the software cataloging rather than make up special rules for it. Many librarians make it so hard on themselves by inventing their own classification systems for software; we find it is unnecessary if you pay less attention to the format and more attention to the content of what you are cataloging.

We catalog using the Dewey Decimal classification scheme. We have found all kinds of applicable numbers, including one for integrated software and one for interactive fiction, if you use your imagination!

If the author of a title is apparent, we use that as the main entry. If the software lists a program manager, a series of programmers, a graphic artist, or no names at all, we use the title as the main entry. If the title on the box is different from the title on the label of the software disk, we go by what is on the disk.

The publisher and copyright date are next and the easiest to find. The ALA guidelines suggest that next we find out how many program files are on the disk, and how many text files. We feel that this is mostly transparent to the user, and if the disk is protected, we can't find out the number of files on it anyway. So we put "Program files on 1 computer disk (Apple); 5 1/4in. +" whatever contents come in the package. Sometimes we are not cataloging a disk at all, but a computer cartridge, and, of course, the Macintosh disks have to be listed as 3 1/2 inches. The physical package contents may read "1 User Manual," "1 Reference Card," or even "1 Parchment Map with a Red Wax Seal."

After that, we list the age requirement and a short description of the program. Then we come to the "system requirements" section. We list whatever we can find on the package and in the manuals, exclusive of a long list of supported printers, or the like. A typical requirements area might read: "System requirements: Apple II+/IIe/IIc

computer, 64K, DOS 3.3, and supported printer. Optional: joystick or mouse." We don't assume that just because the package says the program works on one model of Apple that it will also work on other models, such as the IIc. We go only by what we can discern from the documentation or the package.

After that, we list the program contents, that is to say, what appears on the program menu, not what may or may not be in the directory or the catalog of the disk. If there are multiple disks, we list the contents of each one, even if it is as simple as: "Disk one: (Side A) program files. (Side B) boot side. Disk two: program files."

After contents comes the ISBN if there is one, and then our shelf list information: the copy number, price, and accession date. At this point, we check our authority list of subject headings for the computer collection. Most of them are bona fide Library of Congress subject headings, but we do make up our own quite often. We do genre classification as well, using headings such as "INTERACTIVE FICTION" and "EDUCATIONAL GAMES."

The question often comes up concerning the difference between an adventure game and interactive fiction. This is a hard one, as most interactive fiction games are also adventure games, but not all adventure games are interactive fiction. Our criterion is that if the software is based on a book, such as *Swiss Family Robinson*, or comes with a substantial book which is an integral part of the software, such as the "electronic novel series" published by Synapse and Broderbund, then it is definitely interactive fiction. If the software involves role-playing, has elements of fantasy and derring-do, it is additionally an adventure game. An example of a strict adventure game is the *Ultima* series written by Lord British. When in doubt, we trace under both headings.

We also find ourselves doing added title entries where needed. The correct title *Julius Erving and Larry Bird Go One-on-One* (which was on the disk label), was supplemented in the card catalog by the added title

*One-on-One*, which is the popular title in all the software magazines.

A completed main entry card set might look like this:

SOFTWARE Fudge, Don  
747 Design your own home  
F interior design.  
Avant-Garde, 1985.

Program files on 2 computer  
disks (Apple); 5 1/4 in.  
+ 1 insert + 1 workbook  
+ 1 instruction book  
+ 1 command card + 2 room  
layout cards.

Computer-aided design of  
interior furniture layout.

System requirements: Apple  
II+/IIe/IIc, DOS 3.3, 48K,  
mouse, joystick, Koala pad,  
or paddles. Optional: supported  
printer.

Disk 1 contents:  
(Side 1) Program files for  
Koala pad paddle and joystick.  
(Side 2) Program files for  
mouse.  
Disk 2 contents: Data disk.

No ISBN.

c. 1            7/85            69.95

1. INTERIOR DECORATING  
I. Title.

## **TRAINING, USER AGREEMENTS, AND POLICIES**

Before the patrons ever come into the Library to use the computers, we have to train ourselves and our staffs to operate them. When asked if the library staff was "reluctant" or "eager" to start using micros, the surveyed libraries were fairly evenly split. Many said that their staffs were fearful of computers, yet intrigued by them. The libraries were then asked how their employees feel about the computers now in comparison to their feelings at the start of the project. One librarian said, "the split is still 50/50, but it's not the same people!" Some mentioned that they hate the public access aspect, but love the computers for their own use. Others felt confused and frustrated, while another library's staff was "transported!" Several librarians said that while the younger staff members couldn't live without the micros, the older staff still wanted nothing to do with them. In all, thirty staffs now feel positive toward the computers, twenty feel mixed reactions, and five feel that computers are "mild nuisances" or "extra work."



### Training the Library Staff

It isn't surprising that there was a correlation between the libraries providing the best staff training and the staffs' later satisfaction with the computers. Training offered to staffs varied widely from "a direct order to LEARN" to an outside instructor's ten-hour course in BASIC.

While some libraries relied only on the trusty *Apple Presents Apple* introductory disk (which comes packed with each disk drive), others expected each individual to learn the use of one other title. This has the advantage of spreading the knowledge around, allowing everyone to feel that he or she is an expert at something.

Other libraries used the tried-and-true "each one teach one method," where each staff member passed his or her knowledge on to another staff member. Still others used task-specific training, where a typist would learn just a word-processing function, for example.

Outside instructors, classes at local continuing education centers, and staff "computer comfort" workshops were other options mentioned by librarians.

Avoid having only one person on the staff familiar with the computers. This situation puts everyone else at a disadvantage. No one likes to feel as if he or she is being left out of anything, and a small "computer elite" of those "in the know" will only foster resentment among other staff members. The survey asked, "If you (as the primary computer person) go on vacation, how many other people in your library can answer questions about the computer?" Twelve librarians responded "all employees"; most said two or three employees could answer questions. One person said "Two people here are the computer experts: the director and a page." So it goes.

What types of things should the whole staff know? Certainly simple things like the computer location, policies for use, maybe what types of software are available. We don't need to teach all the employees BASIC, or any other computer language, but we may want them to know what a

floppy diskette looks like, its proper handling, and how to load it into a computer. Not everyone needs to know how to change a printer ribbon, or switch drive cables, or format a disk. But they do need to feel that they know a bit about computers, so that they can at least feel at ease having them in the same building.

### **User Training: Less is More**

In 1981, the only computers around the Liverpool area were in the public schools. The kids were just beginning to learn to use them. Most adults had never seen a computer up close, let alone used one. Before we allowed patrons to use our computers, we required them to sign up for a thirty-minute class, or "validation session." At this class, which was given several times a month, usually forty to ninety people showed up. The class covered the type of equipment the library owned, the types of software held, how to boot a disk, and how to catalog it and run a program. We also went into diskette care and ran down a long list of rules and regulations regarding the amount of reserved time a user could get per week. We also demonstrated all of this on a computer with a twenty-five-inch monitor attached to it, in addition to the small color monitor. It took a great amount of staff time--eventually there were three of us who gave the classes--and still there were long waiting lists.

Enter phase two. After a couple of years of this, people began to acquire computers at home, and they resented having to take a class for something they already knew. We took a Singer Caramate projector and created a ten-minute slide/tape to replace the thirty-minute "live" validation. It was an instant success. Patrons could validate themselves, on demand, and the staff time required was minimal. All that was left for us to do was give out the headphones for the slide-tape, and put the "validated" sticker on the patron's library card when he or she completed the tape. Patrons who already knew how to load a disk were told that the short slide program mostly covered our rules of use, and we received very few objections.

Now we are at phase three. Our area has become high tech-oriented, and many people have computers and know all about them. The micro has become as common as a toaster. So, we have abandoned the slide-tape and have gone to the user agreement, a two-page summary of our rules and regulations. Every patron has to sign one to get a computer user sticker on the back of his or her library card. We file the person's signed form, giving the patron the top half with the rules and policies. The user agreement is working very well at our library.

In fact, the survey showed that very few libraries require patron attendance at a class. Most do require the patron to have a local library card, and most have some type of user agreement or responsibility statement that the patron must sign.

### Typical User Agreements

Many libraries sent sample copies of their user agreements; while they cannot be reproduced here, certain elements were common to all of them. These are listed as follows.

**What kind of training and/or help can the user expect from the library staff?** "Librarians are not computer experts and users must be basically self-sufficient on the Apple. We are here to help you but not to give detailed assistance."

**How much time can you get on the computer?**

"Two hours a week per household."

"One half-hour per day for games, or one hour for word processing or 'serious use,' or two hours for SAT practice."

"Two hours per week. This time may be used all at once, or in one-hour segments. If no one else claims the computer at the end of your time, you may continue to use it until it is claimed. This additional time will not be counted in your weekly two hours, but it must be paid for."

"Adults may be signed in for two continuous one-hour time slots per day. Children may use only one hour of computer time per day."

**Can I reserve time over the phone? Cancel over the phone?**

"Telephone reservations are accepted for that day only."

"Reservations may be made by phone or in person. You may make an appointment for another family member; however, computer time is not transferrable."

"Reservations may be made for fifty cents each. Otherwise, computer time is on a space-available basis. No refunds given."

"One computer is available for reserved appointments. The other computer is available for walk-in use, in thirty-minute intervals."

**What happens if I am late?**

"If you know you are going to be late, please call us and we will hold your time. Otherwise, if you are more than five minutes late by the library clock, your time becomes available to anyone who wants it."

"Persons who do not appear within ten minutes of their reserved time forfeit the first thirty minutes of the time unless prior arrangements have been made with the staff."

**What happens when no one is using the computer?**

"It becomes available for 'walk-in' use."

"The person using the computer may stay on until the next appointment arrives."

"If two patrons arrive at the same time, a coin is tossed to determine which person gets the computer time."

**Can I bring in my own software? (Many patrons can**

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afford software but not computers. Decide early on what types of software you will allow.)

"Absolutely no arcade-type games."

"No copy programs, such as *Copy II+*, will be tolerated."

"Software must be within the boundaries of good taste." (avoids strip poker, etc.)

"Software you own may be used; however, no peripheral equipment, such as tape recorders, printers, disk drives, or modems may be connected to library computers."

**Are there any minimum age restrictions to use the computer?**

"If under 16, you must be accompanied by someone older who has signed the user agreement form and attended a class."

"Must be over 10."

"Kindergarten age."

**Any other restrictions?**

"No more than two people at the computer at one time. You may bring a guest, and the guest does not have to be validated, but YOU are responsible for any damage the guest might cause."

"You must use a particular disk for at least fifteen minutes before you can request another one."

"No food or drink at computers."

"Misuse of software, hardware, noisy behavior or rudeness to staff will not be tolerated, and may result in loss of computer privileges."

"Games may only be used during 'game days'."

"The Library is not responsible for loss of data, programs, or disks resulting from power interruptions, incorrect use of the Apple or software, computer malfunction, or any other cause."

"No private files may be stored at the Library or on Library diskettes."

"Please inform the librarian immediately if you find a malfunction in the hardware or the software."

"The computer may not be used during the final half-hour of each day."

"The computer may be reserved only for the current day or the next day after."

"You may reserve the computer for one month ahead."

"Reserve time up to one week in advance."

"Your library card must be in good standing to use the computers: all fines must be paid."

"All patrons wishing to use the computers for the first time must pass a written test: if more than three questions are missed, the patron will be asked to take the test again at a later date."

"User must agree to pass a test for each brand of computer he intends to use."

**What if I want to copy software?**

"Legal copies of public domain software may be made. All public domain software is so marked. All other copying is illegal and will be grounds for suspension of your user privileges."

**Are there any charges for anything?**

"Paper is two cents per sheet. Mailing labels are ten cents for a sheet of twelve. A full sheet is charged even if only

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a few labels are used. Blank diskettes are \$5 each, but we encourage you not to buy them here, as they can be purchased for less everywhere else in town. They are here for emergency use; any profit from disk sales is used to buy more public software."

"One to thirty minutes of computer time is \$1.00."

"Two dollars per hour, \$2 minimum charge. Fifty cents per fifteen-minute overtime use."

"No charge if using educational software. Fifty cents for use of business or non-educational games. Additional use charge of \$1 to use business software such as *AppleWriter*, *VisiCalc*, etc."

"Use of the printer is five cents per page if you bring your own paper, ten cents per page if using library paper."

"If you ruin a library diskette, the flat fee is \$5."

"The price for printer paper is fifteen cents per sheet, whether you are using Library paper or bring in your own."

Additionally, some user agreements list the hours the computers are available, software lists, and hardware specifications.

### Liverpool Public Library Microcomputer Center User's Agreement

(1) No eating, drinking, or smoking is permitted in the Library. This includes the Computer Room.

(2) You may make computer reservations by telephone or in-person during the hours that the computer room is open. You may make appointments for other validated users in your own family. A validated user is one who has signed a user agreement and has an "LPL" sticker on the back of his library card.

(3) Time is reserved in one-hour blocks. These blocks start on the hour. You may sign up for one hour of time per week on any reservable computer. You may not reserve more than a total of one (1) hour per week. Our week runs Monday through Sunday.

(4) If the time is reserved in your name, you must use the time. Computer time is NOT transferrable to others. This includes family members.

(5) You must bring your OWN validated library card with you. You may not use another family member's card. Your library account must be clear (no fines or long overdue items) in order to use the computers.

(6) If you will be late for your appointment, please call us. If you don't call, we will only hold your time for five (5) minutes by the designated library clock, after which you will forfeit your time.

(7) You may have up to one (1) hour of walk-in time per day. This time DOES NOT count against the one hour per week limit. Walk-in time can be signed up not more than fifteen minutes before the start of an unassigned block of time. If someone does not show up and forfeits his time, walk-in time may not start until ten minutes after the start of the hour. This will still count as a one hour of walk-in time even though only fifty minutes can be used.

(8) If you sign up for time and are a "no show" more than three times during the calendar year, you may lose your microcomputer privileges.

(9) You may not bring in your own hardware, nor may you physically or electronically attach anything to Library equipment.

(10) You may bring in your own software, provided that it falls within the realm of good taste.

(11) Most of the Library's software is protected under the Copyright Law of the United States of America, Title 17, U.S. Code. SOFTWARE PIRACY IS A CRIME! You may not



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make illegal copies of the copyrighted software owned by the Library, nor may you use Library equipment to illegally duplicate software. Automatic suspension of computer use privileges for six months will be the result of noncompliance with this rule. The Library is not responsible for your illegal actions.

(12) If you are unsure of something, please feel free to ask the microcomputer room attendant for assistance. If something is broken, please do not attempt to fix it yourself. Report it to the computer room attendant. Although computers and software are quite rugged, please handle them with care.

(13) You must supply your own data disks, if required by Library software.

(14) You may not load or unload paper or labels from the printers. Please ask to have this done.

(15) Prices per sheet of twelve mailing labels (sold by the sheet only) and per page of computer paper are posted at the computer desk. Printouts are not free.

(16) You are responsible for any damages that you or your guests may cause to either the computers or the software that you use. You may bring a guest with you (he/she need not be validated) but YOU will be responsible for his/her actions.

(17) The Liverpool Public Library is not responsible for damage or loss of data on your software. In addition, the Library is not responsible for any consequential damages arising out of your use of the computers, or the Library's software.

(18) Failure to abide by the above rules, or any others, may result in suspension of computer use privileges. If you are disruptive to others, or use the equipment in such a way as to jeopardize its safety, the microcomputer attendant may require you to leave the microcomputer room and forfeit your time. In the event of serious disregard

for the computer room's rules, your privileges may be suspended.

(19) These rules may be revised from time to time. These policies have been revised as of 4/2/86.

---

I have read the attached rules completely, and agree to abide by them.

Signature \_\_\_\_\_

Please Print--

Last Name \_\_\_\_\_

First Name \_\_\_\_\_ Middle Initial \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_

Phone (required but confidential) \_\_\_\_\_

Age (put "Adult" if over 18) \_\_\_\_\_

Today's Date \_\_\_\_\_

Library Card Number from Zebra Label \_\_\_\_\_

Most of the libraries surveyed did not charge for computer time. Of those that did, the charges ranged from \$4.00 per hour to fifty cents for fifteen minutes (printer paper included). Some libraries charged adults \$1 per hour, while kids got free use.

The minimum age for use varies from none to age 16. There was no consistency on this rule; several libraries allowed preschoolers to use the equipment if an adult was present.



## **OTHER PUBLIC TECHNOLOGIES**

The first section of this chapter deals with electronic bulletin board systems (BBS) and their impact on libraries. In the surveyed libraries, twenty-two either had, or were about to get, communications capabilities for their computers. Most of these library computers were talking to remote databases, such as DIALOG or some of the online book order jobbers. Five libraries were running, or planned to run, electronic bulletin boards.

### **So, What's a Bulletin Board System?**

Well, it's not the cork "analog" bulletin board out in the hall. You need a computer, at least two disk drives (three, or a hard drive, would be better), a modem, a dedicated phone line, and bulletin board software. Anyone with a home computer and a modem can call your BBS and read mail, leave mail, read features, upload and download public domain software, and generally interact with all the other users. Only one person at a time can call with most BBSs, although there are multiuser versions, too. Also, you need

at least one person to act as the sysop (system operator), preferably someone with a computer and modem at home so that some of the sysopery can be done remotely, when the library is closed.

The modem lets your computer hook up to a phone line. Modems come with many different features, but for bulletin board use, it's important that the speed at which the modem transmits and receives is compatible with the BBS software you are going to buy. Modem speed is measured in characters (bits) per second; a baud rate of 300 bps (bits per second) transmits thirty characters per second, while 1200 baud is four times faster, with 120 characters per second. Three hundred baud is about as fast as the average reading speed, and we have found that most of our computer patrons have 300-baud modems. We do have some patrons who could receive us at 1200 baud if we had a modem that would transmit to them at that speed. The price for higher speeds is dropping; in a few years, possibly, 1200 baud will be the standard. Faster modems are good when you are calling long-distance, or are being charged connect-time for database use. Most of our BBS users call locally, so the faster speeds wouldn't be that useful.

Bulletin boards typically can detect what speed modem the incoming caller is using. The software then tells the host hardware at what speed to transmit. In our case, we only have a Hayes Micromodem, the top speed of which is 300 baud. We hope to upgrade to a faster modem at some point in the future.

Besides the speed of the modem, you should look for a modem that has lights, or other type of status indicators. Some have speakers so that you can tell if the phone line has connected to another computer, a voice, or a busy signal. Ours has an online light, which tells that the computer is holding the phone line, but without a speaker; we don't know if the computer is grabbing a dial tone or a carrier. The carrier is the high-pitched squeal which carries the computer data over the phone line. When someone calls our BBS phone line, it sounds like the phone is picked up, and then our computer squeals its carrier

over the lines. The computer calling on the other end answers back with its own squeal, and a communication link-up is made. All of this is silent, if you are just watching the screen.

Some modems are better than others at distinguishing a carrier from a dial tone, and will hang up the phone in disgust if the latter is encountered. The publisher of the BBS software you are considering may be able to recommend certain modems to you. If not, the publisher may have a "fix" for the software which will help your modem tell if it has a computer, voice, or whatever on the line. We had a problem with people calling our computer and talking to the carrier. This invariably "hung" our software. It knew what to do with a carrier, but not with a human voice. The fix the manufacturer recommended was simple and effective. Our computers ask the calling computer to transmit a "return" a couple of times. If an ASCII 13 is not received, then our computer assumes that the call was not from a real computer and hangs up.

While you do not need a computer dedicated to the bulletin board, you do need a dedicated phone line. It will only drive you crazy if you try to use one of your usual business lines. Most library BBSs are only open, or "up," at night, when the library is closed. People forget this. They will try the BBS number at all hours of the day, too. You will answer the phone "XYZ Public Library..." and all you will get is a carrier in your ear. A separate, or dedicated, phone line ends all that. Whenever your BBS is not up, just unplug the modular jack. Anyone calling the number will just hear ringing--and you will hear nothing. Actually, you don't even have to unplug the line. It's a habit we got into because our BBS is so popular. Communications software these days usually has a feature called autodial. You can tell the modem to keep calling the designated phone number until a carrier is reached. Many people use this feature to grab the phone line for our BBS the minute it goes up. This isn't a problem unless we are trying to test something ourselves. We unplug the phone line and then no one can get in.

Remember, too, that the modem phone line cannot go through a multiplexed, low voltage, switchboard-type phone system, as is found in so many offices now. A special line with normal "Bell System" voltages will have to be pulled to the computer location if you have one of these new phone systems. If you are unsure what you have, a simple test would be to try a phone answering machine in the proposed jack. Answering machines also require standard voltages to work. If the machine works every time, your modem should be fine, too.

The costs for this will vary. In our area, Bell brought the dial tone to our building for about \$80. Our low-voltage phone system necessitated that a line be pulled from the Bell voltage to the other end of our building for the BBS and the online database computer. This bypassed our whole switchboard system. Because of the length of the line in our building, and the fact that we needed outlets to it in three different locations, the price was close to \$200 for the in-house line installation. Monthly charges for the line are under \$15. Most of our calls are incoming, or free to us, while we do make some calls out using the modem, which are charged at the normal business call rate.

If you are in an area where there are frequent thunderstorms in the summer, you will want to invest in a phone line surge suppressor to filter the line spikes from your modem and your computer. While it may do nothing to prevent damage from a direct lightning hit to your telephone pole, it will do its part to protect your equipment from being zapped. Of course, in the event of a thunderstorm, the phone line should ideally be unplugged from the modem--but you can't do that if the library is closed and you live miles away. Phone line surge suppressors are available for \$50-\$200 in many of the supply catalogs listed in the back of this book.

Most BBS software also requires that a clock be installed in your computer to date and time stamp the calls for the log. Make sure that the clock you get is compatible with the software; check with the publisher. The clock is also useful for bouncing users off the system when they have used up too much time. It also warns the user when

he or she has stayed too long in idle. Most BBS software will hang up on a user who has not done anything within a certain period of time. This weeds out the system crashers who try to hang a BBS by going to some remote corner of the code and biding their time. The clock keeps track of them and out they go, sooner or later. It would be immensely useful if the BBS supports the same kind of clock that *ProDOS* supports--for example, the Thunderclock. That way, all your *AppleWorks* files will be automatically date-stamped, too. We have a Mountain Clock. It works great with our BBS but *ProDOS* doesn't recognize it.

### *Choosing BBS Software*

There's a lot of it out there. We had three BBS packages here before we found one that we liked.

Find software that is bullet-proof, that is, ask the publisher how difficult the software is to crash. Ask for names from his customer list, call the users, and ask how satisfied they are. Use your modem to call a BBS running the proposed software, and "test-drive" it. It is likely that the publisher runs a test BBS just for this purpose.

Features you may want are "obscenity filters," which compare a text file of whatever words you do not want on your BBS to anything a user is trying to leave on your board. If any kind of match is found, the message will not be saved. These are not foolproof, however, as most work by comparing character strings. This means that while your obscenity filter may be looking for "DIRTY WORDS," someone typing in "D I R T Y W-O-R-D-S" could get through. But such a filter will work for most things. Our experience is that eternal vigilance will work just as well.

Look for software with well-protected security levels. You don't want everyone to be able to get to your sysop maintenance menus! Do you want to assign system passwords or have the software do it for you? Our software gives out passwords on request, but gives the new user a security level of 0. This means that the person can



read all the messages on the BBS, but cannot leave anything. Every day, we check the request file and upgrade the level zeros to level 1, if their home information looks okay (real phone number, real name, etc.). Many private BBSs take the time to personally call each and every new user to check them out. We don't have time for this. We do check the entire new message base every day to make sure no one is abusing the system. If someone starts some trouble, we just downgrade their access to level 0 again.

The sysop menu functions should be easy to use. You should be able to edit a user's account, print out your log, delete users who have not called within a certain time period, and many other functions.

Is the program code in a language you can customize? You do not have to be a hot-shot programmer, but most BBS software will need some local tinkering to get the look and feel of it the way you want. You need to know rudimentary BASIC, at least, and be able to follow the program code.

Look at the documentation. Is there an index? Maybe there is also a map to the program code that will help you later when you are looking for the part of the program that checks for new mail, for example. There may even be an index to all variables in the program, and what they do. This is invaluable when it comes to troubleshooting.

Are updates available, or does the publisher consider it a finished product and no longer supports it? Can you get assistance in setting up the BBS or in solving problems?

We are currently using *GBBS Pro*, a product of Micro Data Products (5739 S. Olathe Ct., Aurora, CO 80015). It costs \$125 and we are very satisfied with it.

Running a BBS is not for everyone. It does take considerable staff time, about one-half hour per day for normal maintenance, and several hours for major overhauls, which may occur weekly or monthly, depending on how current you want your feature articles to be.

### A Public Library Bulletin Board

In 1984, the Liverpool Public Library established an electronic bulletin board system for patron access. What follows is an attempt to describe the phenomenon of electronic bulletin boards and how they have affected our library and our community. It has been interesting to open a BBS and to see what develops. It reminds me of a fisherman setting nets out in the cool night sky, waiting to snag whatever drifts in. In our six months of experience with a free, public-access BBS, we have indeed caught some keepers and some old shoes. I will tell you about some of the bait we used.

First, a little background on our library, our equipment, and our area. We have had a long association with library automation, having been the test site for the Gaylord computerized circulation system, back in 1975. In 1981, we began our public-access computers, and in 1984 we started circulating software for home use. The next logical progression led us to a free BBS, to be operational whenever the library was closed. This would allow our many computer users access to information exchange even after the staff had all gone home. We duly put in a dedicated phone line, a phone line surge suppressor, and looked for BBS software to meet all of our needs. The problem was, we didn't exactly know what our needs were, we just wanted a flexible program that wasn't too difficult to use. We test-drove *Networks II* and found it flexible but flawed (it gave you a password if you were another computer, a voice, or a dial tone--it could never seem to tell the difference!). But *PMS (People's Message System)* seemed to be working okay at Chicago Public Library, and we talked to at least one other corporate user who spoke of it as 'the best BBS software you can buy today (1984).' *PMS* arrived with a manual stamped 'Preliminary Draft, 1981.' It took us six phone calls to the programmer and six months to get the program working properly. It requires that the sysop (system operator) know how to program in fairly fluent BASIC, and we have had many problems, most of which have been worked out now. But we are in the market for better and newer BBS software, one that will take advantage of the 128K on our Apple IIe, that will

allow for 1200- as well as 300-baud transmission, and will support some kind of standard data transfer protocol, such as XModem. But enough background, on to the exciting part!

As we opened the BBS for the first time, we began with a few standard features, such as electronic mail, upload/download of public domain software, and a list of all local BBS phone numbers. We also announced that our resident electronic librarian, Aunt Libby, would entertain reference questions and get the answers back up on the board within twenty-four hours. Aunt Libby built a whole mystique around herself. She posted her fictional biography--living alone in a mansion overlooking the sea (which was over 2,000 miles away), with only her Maine Coon Cat, Walden, and her butler, Chives, to keep her company. Libby kept inviting people over for Possum Pie (actually a chocolate cheesecake when, by popular demand, the recipe finally appeared on the board. "Take one cooperative possum..." it began.). Yes, Lib drew quite a following. She has answered questions from the *Physician's Desk Reference*, from Biblical histories, from *World Book*, from the *Guinness Book of World Records*, and all her other well-worn reference books. Her all-time favorite question was "What do tadpoles eat?" Aunt Libby writes somewhat in the style of Miss Manners. Everyone is always on his best behavior when he writes to Auntie; many of the letters are signed, "Your Nephew." Their language becomes almost Victorian, and no one ever uses harsh words. There was a bit of a stir when it came out that Auntie's Possum Pie called for rum as flavoring. It seemed that everyone had assumed she was a teetotaller!

In contrast to Aunt Libby, we invented Binky Schmurtz. Every system needs a scapegoat to blame all its troubles on. Every time a file got dumped, a message scrambled, a system hung: Binky did it. We let it be known that we had hired a night sysop to oversee things while the library was closed. Binky was the ultimate rude nerd. He knew everything about computers and took delight in telling people that the BBS could see into their home systems, and he could tell if they had been doing anything illegal, like copying software. He said he just looked for

pirate flags on the walls, and things like that. People sent hate mail to Binky, who answered it right back in the same style. Binky began to have a following; people either loved him or hated him. Finally, we got tired of writing him, so we fired him. Well, actually we made up a whole story about him having tied into the IRS computer, allowed himself 9,000 dependents, and ordered himself a refund check of one million dollars. Then we had him hide out in the Adirondack mountains for awhile. By this time, one of our users decided to assume Bink's identity, so he talked to another local sysop and got him to "hire" Binky Schmurtz as his day sysop. Now we hear there is a "Binky Schmurtz--should he stay or should he go?" poll going on at that BBS--and Binky is winning! In fact, the Bink will soon be moving to his very own BBS very soon, called appropriately enough, Binky's Board. And to think the legend began on our humble BBS.

Soon, we were inundated with budding authors searching for an outlet. We had a twelve-year-old columnist for the TRS Color Computer, a seventeen-year-old with an Apple column, another one with a movie review column, an educational software reviewer, a travel tips columnist, and several more. What we find is that many people will write one or two columns and drop out of the writing game. It is important to keep reminding people that you are looking for columns and articles; this has kept us with a running supply of material. We also frequently put up articles and press releases relating to library services and programs. For example, we have lists of new, loanable videocassettes and new software titles up on the board every month. We are planning a series of special interest book lists for YAs and sci-fi/fantasy buffs.

Fantasy plays a big part on our BBS. From time to time, users have assumed identities such as "Tillie Baud, the Bag Lady" (she calls with a portable computer, using a pay phone), "Electric E. Potter" (farmer; has a 1K Apple I, has to climb the phone pole to plug in his modem), and the ever-popular "Murray the Moose." Murray tells jokes and is the comedian of the BBS--sample: "What is the name of the world's most famous donkey?"--answer: the borough of Manhattan! The most unusual pseudonym was "Orthin

Drabk" from "Space and Time." He appeared on the board one night, appealing for help in finding the White Wizard, as "only he would know why I am here." People tried to help Orthin find his way back to his home planet for weeks, until Orthin disappeared one night, as mysteriously as he had come.

The camaraderie of the BBS crowd is amazing. Someone came up with the idea of "The BBS Picnic," sponsored by the Library one sunny Saturday. For what seemed like months, "THE PICNIC" was advertised on our board and other local BBSs. Aunt Libby promised to bring Possum Pie to feed all attendees. Although the final attendance was only about twenty people, we did get to meet most of the other local sysops, and a good time was had by all. We are getting requests for another picnic, now that everyone has heard all about the original one. Many of our users are spread out over a fifty-mile radius, and many more are teens without transportation, so it may be tough to get everyone to participate.

Another thing--people may want to protect their anonymity. On the BBS, you have no apparent age, race, creed, ability, or disability. The computer is the great equalizer. We have one user who was terribly disfigured in a shotgun accident. He's a teen who seldom leaves the house and is tutored at home. He became our friend over the airwaves, and wanted to come in and meet his friends at the Library. He has been in several times to talk computers and software and has many people trading electronic mail with him on the BBS. He has never discussed his facial injury on the board. But he came to the BBS picnic, played frisbee, ate "possum pie" with everyone else, and had a great time. This is not saying so much about him, but about the rest of us. His injury is repelling. It is something that might frighten many of us to have as little to do with him as possible. The electronic distancing the BBS gives allows everyone the opportunity to get to know someone without visual prejudices getting in the way.

One of the most popular features on the BBS is called storyline. We began a story about a TV technician at a satellite earth station, on "a dark and stormy night." We left each segment hanging, so that the next user could add to the story. It ended up as a small novel, spanning several planets, alien beings, and characters from the BBS.

Everyone, from Murray the Moose to Aunt Libby, got written into the storyline somewhere. After about a month, we ended the story ourselves, when it became apparent that it had gone as far as possible. We have since started a second storyline, this one a soap opera called, "As the Disk Drive Turns."

In short, there are many ways the public library can extend itself past closing time, and the electronic bulletin board is one that has proven useful to us. We hope to expand soon to a hard disk to allow for more features and informational articles. With the proliferation of home computers and the price of modems and telecommunications software dropping daily, it is only a matter of time before many other libraries' patrons demand some type of local, free, informational online service.

### **Public Access to Dial-up Databases**

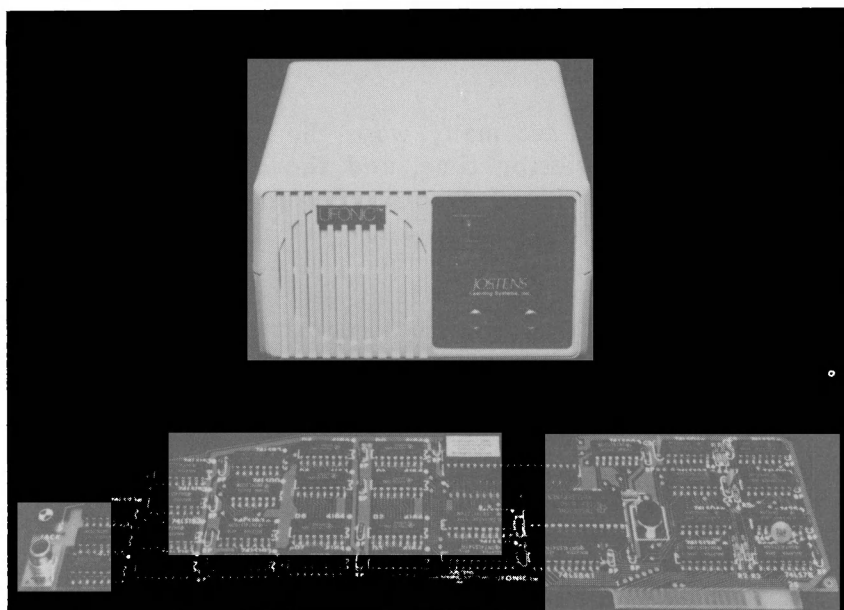
While about twenty libraries had or planned to get electronic communications, most were not BBSs but access to DIALOG, BRS, Dow Jones, Alanet, or other remote databases. These were used mostly for online reference service.

The survey found that there was no clear picture of how to charge for these services. Some libraries absorbed the costs themselves, while others charged the connect-time back to patrons. One library charged connect-time plus ten percent.

There was no incidence of direct patron access to the dial-up databases in this sample.

### Handicapped Access to Computer Technology

The best source for information on this topic is the quarterly *Closing the Gap* (POB 68, Henderson, MN). Back issues are available for \$4 each, and an annual resources issue is published every spring, available for \$7.95. This issue lists software producers, lists software by disability, describes both software and hardware, and gives a resource guide of associations and publications. Additionally, public domain software sources are also listed.



*Jostens Learning Systems' Ufonic<sup>TM</sup> voice system, a voice synthesizer for the Apple computer.*

Text-to-speech synthesizers are used both for the blind and for literacy and English as a Second Language (ESL) programs. Jostens Learning Systems (600 W. University Dr., Arlington Heights, IL 60004) has one such product, which typically involves an interface card and some type of speaker. Jostens' Ufonic voice system (\$495) provides a natural, human-sounding voice and to teach ESL to elementary-aged students, among other things.

Many excellent voice synthesizers are available these days, the disembodied sound of the Kurzweil voice notwithstanding. The new ones can be programmed to speak in female as well as male voices. Some of the more popular ones for use with the Apple are:

Echo +--Street Electronics Corp., 1140 Merk Ave., Carinteria, CA 93013, \$149.95. Converts ASCII text files to speech, has been around a long time, highly supported. The Cricket, at \$179.95, emulates the Echo + for the IIc, so that the same software can be used.

Votrax Personal Speech System--Votrax, 500 Stephenson Highway, Troy, MI 48084, \$395. Highly supported, attaches through either serial or parallel ports.

### *Talking Software*

Braille-Edit--Raised Dot Computing, 408 S. Baldwin, Madison, WI 53703. Word processor that translates to and from Grade II braille. Braille input can be from the VersaBraille System (Telesensory Systems, POB 7455, Mountain View, CA 94043, \$6,750), which saves braille information to ordinary audio cassette. Braille can then be produced with the Cranmer Perkins Brailier (Maryland Computer Services, 2010 Rock Spring Rd., Forest Hill, MD 21050, \$2,750). Raised Dot computer also publishes a very good newsletter on computer applications for the blind at \$18 per year.

Word-Talk--Computer Aids Corporation, 4929 South Lafayette St., Fort Wayne, IN 46806, \$195. Supports the Echo and the Votrax, and the Epson, Okidata, and Imagewriter printers for printer commands such as underlining and boldface type. This is a full-featured word processor which echoes each character when typed. The entire file can be read back in speech mode, as well.

### *Alternative Keyboards*

These are for people whose involuntary muscle movements or other disabilities make it difficult to use a standard



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Apple keyboard. Many of the products listed below have touch-sensitive membrane keyboards or standard keyboards with widely separated and enlarged keys. Others are available which operate with a mouth-held wand or sense a steady eye gaze.

Apple King Keyboard--TASH, 70 Gibson Dr., Unit 1, Markham, Ontario, Canada L3R 2Z3, \$1,197. Interface connects to slot 1. Does not disable regular keyboard.

Keyport 717--Polytel Computer Products, 2727 East 21st, Tulsa, OK 74114, \$179. User-programmable keys, connects to game port, does not disable regular keyboard.

Unicorn Expanded Keyboard--Unicorn Engineering, 6201 Harwood Ave., Oakland, CA 94618, \$295. This requires separate purchase of the Adaptive Firmware Card (\$400) available from Adaptive Peripherals, 4529 Bagley Ave., North Seattle, WA 98103.

### *American Sign Language and Fingerspelling Programs*

Fingerspeller 1--Cyber-serve, 5809 McGuire Rd., Edina, MN 55435, \$39.95. Practice and review of the manual alphabet.

Micro-Interpreter 1--Microtech Consulting Co., 206 Angie Dr., POB 521, Cedar Falls, IA 50613, \$49.95. Teaches fingerspelling or ASL words. User-speed controlled.

### *Other Sources of Information*

"Aids and Appliances Review" available from the Carroll Center for the Blind, 770 Centre St., Newton, MA 02158.

The Library of Congress, National Library Service for the Blind and Physically Handicapped, 1291 Taylor St. NW, Washington, DC 20542. Many bibliographies, resource lists, and advice on talking terminals, software, and input/output devices.

No resource list would be complete without the name of the Special Needs Center of the Phoenix Public Library, 12 E. McDowell Rd., Phoenix, AZ 85004. Among their many resources for the blind and physically handicapped are a VersaBraille paperless braille computer, an Apple IIe with Echo speech synthesizer, a Cranmer Brailier, Text-talker, and Braille-Edit.

### **Literacy and the Computer**

While none of the surveyed libraries ran a literacy project of any kind, some information on such projects may be given.

An excellent annotated list of educational computer software for youth and adult literacy programs is available from the Literacy Assistance Center, 15 Dutch St., 4th Floor, New York, NY 10038. It is called "Booting Up: A Computer-Assisted Bibliography."

Literacy projects in public libraries are currently being run at Brooklyn Public Library and at Queens Borough Public Library in New York.



## **WHAT WE'VE LEARNED FROM OUR COLLEAGUES**

The survey respondents were asked what advice they would give other librarians considering starting a public-access computer project. Their responses are summarized here.

"It takes more time than you could imagine. Dedication is required or the project will fail."

"Do it! But stay one step ahead of the public in what you know about computers. They will think you are a whiz, and you will be doing the public a good, useful service."

"When you add computers and computer-related services, add staff to handle them! It seems, in most situations, the computer is added to an already-existing workload and there simply isn't enough time to learn how to use the system in its fullest, to read software reviews and keep current in the field. The survey failed to consider the impact of local computer user groups. Our Apple group is very active and visible...and has helped us out a great deal."

"We've had very good success with coin-op. It controls usage enough that the staff hasn't been overwhelmed. We do offer some free time for learning computer skills. We also have been able to use 'coupons' for free computer time as prizes and as incentives for teachers to give out."

"They're great! The public loves them!"

"It takes LOTS of staff time monitoring use, breaking up arguments, etc. Teen males use them primarily, which makes other potential users reluctant to approach."

"Be aware of the staff time commitment; allocate enough money for software, decide on policy for duplicating disks vs. buying back-up copies. Consider a system for in-house use and training as well as a public system."

"Very time consuming, very noisy, but well worth it. Creates demand for more public access in other departments. We have mainly stayed with pre-packaged games requiring little training and little supervision, as we have very little staff time to devote to the computer. Software control is needed."

"Smaller libraries actually seem to have less problems or less fears about patrons' misuse. Maybe that is because most patrons are personally known by the librarian. Also, because of space limitations, the micro is generally in sight of the staff at all times."

"It takes a lot of time. At least one librarian has to be very involved and highly motivated to take charge. But it's fun, and a tremendous amount can be learned."

"We have found that people would like more information on how to use software, but don't want to use manuals. Everyone wants to plug in and do, rather than read, and children are particularly impatient. User frustration has a lot to do with time committed to self-training: more time = less frustration. Staff have been pleasantly surprised by this service--by the positive response of the public, by the ease at which it has been

incorporated into our routine, by their own competence in an area where they thought they had none, and were very nervous at the outset."

"Five thousand dollars was borrowed to start our computer program--this was paid back in one and a half years by charging \$4 per hour and having classes at the beginning."

"Peak public interest in computers is past now--our microcomputer is used only thirty percent of our open hours. I'd consider more circulation of smaller computers for home use than having a library-based set-up."

"This is a great service! Even for a small, rural library, short on staff and money!"

"The trend in our metropolitan area is that our micro use is down from what it was three to five years ago. We purchased one for computer literacy. With a population that is now more computer literate we are looking around for other uses of the public access computer. We are also using it more and more for office functions."

"Locating the computer in a neutral and somewhat isolated area was a good idea--both adults and children use it, and the noise doesn't bother anyone."

"When buying equipment, buy the same type, including printers. Some software, such as *Print Shop*, needed to be configured for each type of printer used. We had a lot of frustration in trying to use the same program on two different printers. We now restrict the use of *Print Shop* to one printer only. Librarians just starting to use a public access computer should insist on having dedicated time for learning new software, for input of data for library applications, etc. I must vie for time on one computer with the public--when I have the time, the computer is most often in use! Actually, having one computer for the exclusive use of the staff is best. I just bought a computer for home because I can't get all my work done at the library!"



## CORE LIST

The "Core List" provides titles of software which we have used successfully at Liverpool Public Library. It is by no means a comprehensive list; it does suggest recommended selections. The Library owns many more titles, but these are the best of the bunch for public use. Prices listed are those at the time of our purchase; publishers (see addresses, also in Core List) should be contacted directly for current prices.

In addition to software and publishers' addresses, the Core List also provides sources of computer supplies, the addresses of professional review sources mentioned in the text, and the addresses of consumer-oriented review sources mentioned in the text.

II, II+, IIe, IIc  
ALCAZAR/THE FORGOTTEN FORTRESS  
LOUGHRY, TOM  
ACTIVISION, \$39.95  
RECREATION



A FANTASY ROLE-PLAYING ADVENTURE GAME  
INCLUDES A SAMPLER OF OTHER ACTIVISION TITLES  
48K

II, II+, IIc, IIc

ALGEBRA

HAYDEN SOFTWARE, INC. \$39.95

EDUCATION

PRACTICE IN LINEAR, LITERAL, QUADRATIC EQUATIONS,  
ETC. PART OF THE SAT SCORE IMPROVEMENT SYSTEM  
HIGH SCHOOL AGE.

II, II+, IIc, IIc

ALGEBRA ARCADE

DENNIS, MICK, ET AL.

WADSWORTH ELECTRONIC PUB., \$39.95

EDUCATION

LEARN ABOUT ALGEBRA, EQUATIONS, AND GRAPHS IN  
THIS CHALLENGING GAME.

12 TO ADULT

II, II+, IIc, IIc

AMERICA COAST TO COAST

CBS SOFTWARE, \$49.95

EDUCATION

IMPROVE YOUR KNOWLEDGE OF U.S. GEOGRAPHY AND  
HISTORY.

INCLUDES VINYL KEYBOARD OVERLAYS

8 TO ADULT

II, II+, IIc, IIc

THE APPLE EDUCATION CLASSICS

APPLE COMPUTER, \$34.95

EDUCATION

MATHEMATICS, TRIVIA, ECONOMIC SIMULATIONS, AND  
WORD GAMES

INCLUDES "THE SHELL GAMES" AND "ELEMENTARY, MY  
DEAR APPLE"

6 TO ADULT

II, II+, IIc, IIc

APPLE II 6502 ASSEMBLY LANG. TUTOR

HASKELL, RICHARD E.

PRENTICE HALL, \$34.95  
EDUCATION  
A TUTORIAL TO TEACH 6502 ASSEMBLY LANGUAGE  
ADULT

II, II+, IIe, IIc  
APPLE LOGO  
ABELSON, HAROLD  
BYTE/MCGRAW-HILL, \$150.00  
EDUCATION  
AN INTRODUCTION TO PROGRAMMING IN THE LOGO  
LANGUAGE  
10 TO ADULT

II, II+, IIe, IIc  
APPLE PASCAL  
APPLE, \$250.00  
UTILITY  
THIS FOUR-DISK SET HOLDS THE UCSD PASCAL  
LANGUAGE.

IIe, IIc and II+ WITH EXTRA MEMORY AND VIDEX OR  
OTHER PREBOOT DISK  
APPLEWORKS  
APPLE, \$250.00  
INTEGRATED  
WORD PROCESSOR, DATABASE, SPREADSHEET, ALL  
LIBRARIES SHOULD OWN

IIe  
APPLE WRITER II  
APPLE, \$195.00  
WORD PROCESSOR  
64K MINIMUM

II, II+, IIe, IIc  
ARCADE BOOT CAMP  
BESNARD, JOHN  
PENGUIN SOFTWARE, \$29.95  
RECREATION  
SHARPEN YOUR ARCADE SKILLS, ENLIST IN THE  
ARCADE ARMY. PRACTICE IN DRIVING, PILOTING, ETC.

II, II+, IIe, IIc

ARCHON

WESTFALL, ANNE

ELECTRONIC ARTS, \$40.00

RECREATION

CLASSIC BATTLE BETWEEN THE FORCES OF GOOD AND  
EVIL IN A CHESS-LIKE SETTING

JOYSTICK

II, II+, IIe, IIc

BALLYHOO

INFOCOM, \$39.95

RECREATION

CIRCUS-BASED TEXT ADVENTURE

II, II+, IIe, IIc

BANK STREET WRITER

BRODERBUND, \$69.95

UTILITY

A HOME-ORIENTED WORD PROCESSING SYSTEM

10 TO ADULT

II, II+, IIe, IIc

BEAGLE BAG

KERSEY, BERT

BEAGLE BROS, \$29.50

RECREATION

CONTAINS GAMES FOR ONE OR TWO PLAYERS

ALL AGES

II, II+, IIe, IIc

BEAGLE BASIC

SIMONSEN, MARK

BEAGLE BROS, \$34.95

UTILITY

AN APPLESOFT BASIC ENHANCEMENT UTILITY

INCLUDES APPLE TIP BOOK #6

ADULT

II, II+, IIe, IIc

BLAZING PADDLES

BAUDVILLE, \$49.95

UTILITY

VERY POWERFUL GRAPHICS EDITOR AND ILLUSTRATOR  
ALSO AVAILABLE: SHAPES AND FONTS DISKS

II, II+, IIe, IIc  
BODY IN FOCUS, THE  
CBS SOFTWARE, \$49.95  
EDUCATION  
HUMAN ANATOMY TUTORIAL AND QUIZ  
10 TO ADULT  
48K

II, II+, IIe, IIc  
BOOKENDS  
SENSIBLE SOFTWARE, \$125  
UTILITY  
A BIBLIOGRAPHIC RETRIEVAL SYSTEM  
NOW YOU CAN INDEX YOUR MAGAZINES, HOME  
LIBRARY, ETC.

II+, IIe, IIc  
BRIMSTONE  
SYNAPSE/BRODERBUND, \$49.95  
RECREATION  
CLEVER AND LITERARY TEXT ADVENTURE FEATURING  
SIR GAWAIN

II, II+, IIe, IIc  
C-DEX TRAINING FOR VISICALC  
C-DEX, \$70  
EDUCATION  
TUTORIAL FOR FIRST TIME-USERS OF VISICALC, THE  
ELECTRONIC SPREADSHEET

II, II+, IIe, IIc  
CAPTAIN GOODNIGHT AND THE ISLANDS OF FEAR  
WISE, MICHAEL  
BRODERBUND, \$49.95  
RECREATION  
ARCADE ADVENTURE FEATURING LAND, SEA, AND  
AIR WARFARE  
64K, JOYSTICK

II, II+, IIe, IIc  
CAR BUILDER  
HEFTER, RICHARD  
WEEKLY READER FAMILY SOFTWARE, \$39.95  
EDUCATION  
DESIGN, CONSTRUCT, AND TEST YOUR OWN CARS  
8 TO ADULT  
48K; OPTIONAL: SUPPORTED PRINTER.

II, II+, IIe, IIc  
CARRYING/REGROUPING FOR ADDITION  
RENAISSANCE LEARNING SYSTEMS, \$45.00  
EDUCATION  
PART OF THE GUILDMASTER ADVENTURES WITH  
WHOLE NUMBER SERIES  
"TEACHER'S EDITION"  
6 TO 10  
64K

II, II+, IIe, IIc  
CAVE OF TIME, THE  
PACKARD, EDWARD  
BANTAM SOFTWARE, \$34.95  
RECREATION  
FOUR ADVENTURES: LOCH NESS, LINCOLN, CASTLE,  
AND PREHISTORIC TIMES  
10 AND UP  
48K, DOS 3.3; OPTIONAL: JOYSTICK

II, II+, IIe, IIc  
CHALLENGE MATH  
MCMAHON, CATHY, ET AL.  
SUNBURST COMMUNICATIONS, \$59.00  
EDUCATION  
A SET OF THREE MATH GAMES: ALIEN INTRUDER,  
DIGITOSAURUS, AND MATH MANSION  
GRAPHICS, MAP  
6 TO 12

II, II+, IIe, IIc  
CHAMBERS OF VOCAB  
READER'S DIGEST, \$39.95  
EDUCATION

VOCABULARY ADVENTURE GAME  
9 AND UP

II, II+, IIe, IIc  
CHILDREN'S CAROUSEL  
DYNACOMP, \$20.00  
EDUCATION  
FOR THE PRE-SCHOOL CHILD  
TEACHES SAME AND DIFFERENT, SHAPES, NUMBERS,  
ETC.  
HARDER THAN HODGE-PODGE  
3 TO 6

II, II+, IIe, IIc  
CHIVALRY  
HEFTER, RICHARD  
WEEKLY READER/XEROX, \$49.95  
RECREATION  
THE KING HAS BEEN CAPTURED BY THE BLACK  
KNIGHT! YOU MUST MASTER THE SEVERAL GAMES  
TO RESCUE HIM!  
A VERY EASY ADVENTURE

II, II+, IIe, IIc  
CHOPLIFTER  
BRODERBUND, \$34.95  
RECREATION  
MANEUVER YOUR HELICOPTER ACROSS ENEMY LINES  
TO RESCUE THE HOSTAGES.  
JOYSTICK

II, II+, IIe, IIc  
COVETED MIRROR, THE  
BERNS, EAGLE I., ET AL.  
PENGUIN, \$34.95  
RECREATION  
AN ADVENTURE GAME FEATURING ARCADE  
SEQUENCES AND ANIMATION  
10 TO ADULT

II, II+, IIe, IIc  
CROSSWORD MAGIC  
SHERMAN, LARRY

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L&S COMPUTERWARE, \$49.95

UTILITY

CREATE, EDIT, AND PLAY CROSSWORD PUZZLES RIGHT  
ON THE COMPUTER, OR PRINT THEM ON THE PRINTER.

II, II+, IIe, IIc

CUTTHROATS

INFOCOM, \$39.95

RECREATION

INTERACTIVE TALES OF ADVENTURE, SUNKEN  
TREASURE AND DEEP SEA DIVING  
STANDARD LEVEL

II, II+, IIe, IIc

D CODE

BIRD, ALAN

BEAGLE BROS., \$39.95

UTILITY

APPLESOFT PROGRAM COMPACTER AND DE-BUGGER  
DOS 3.3 AND PRODOS  
PRODOS VERSION REQUIRES 64K

II, II+, IIe, IIc

DAVE WINFIELD'S BATTER UP!

AVANT-GARDE, \$39.95

RECREATION

TUTORIAL AND "SLUG-FEST" IN BASEBALL HITTING AND  
PITCHING  
UP TO FOUR PLAYERS  
64K, DOS 3.3

II, II+, IIe, IIc

DB MASTER 4 PLUS

STONEWARE, \$295.00

POWERFUL DATABASE, TOO DIFFICULT FOR PUBLIC USE  
INCLUDED BECAUSE PUBLISHER INFORMATION WAS  
PROMISED EARLIER IN THE TEXT  
REQUIRES 64K

II, II+, IIe, IIc

DELTA DRAWING

SPINNAKER, \$49.95

EDUCATION

A CLONE OF THE TURTLE GRAPHICS PORTION OF LOGO  
COLOR  
DRAWINGS MAY BE PRINTED (NOT IN COLOR).

II, II+, IIe, IIc  
DINOSAUR DIG  
CBS SOFTWARE, \$49.95  
EDUCATION  
DINOSAUR TUTORIAL AND QUIZ GAMES  
10 TO ADULT

II, II+, IIe, IIc  
DISK ARRANGER  
SWANSON, WILLIAM  
PENGUIN SOFTWARE, \$30.00  
UTILITY  
CATALOG EDIT UTILITIES FOR APPLE, INCLUDING  
ALPHABETIC SORTS, DISK MAPS, CUSTOM CATALOGS

II, II+, IIe, IIc  
DISK REPAIR KIT  
WINZLER, DAVID  
PENGUIN, \$29.95  
UTILITY TO RECOVER INFORMATION FROM DAMAGED  
DISKS, AND BAD MAP SECTORS, AND SELECTIVELY  
FORMAT TRACKS

IIe, IIc  
DOLLARS AND \$ENSE  
MONOGRAM, \$100.00  
UTILITY  
ACCOUNTING FOR THE HOME  
REQ: IIc or IIe WITH EXTENDED 80-COLUMN CARD  
128K; OPTIONAL: MOUSE

II, II+, IIe, IIc  
DOS BOSS  
KERSEY, BERT  
BEAGLE BROS, \$34.95  
UTILITY  
DOS BOSS IS A DISK OPERATING SYSTEM COMMAND  
EDITOR AND INCLUDES APPLE TIP BOOK #2.  
ADULT



II, II+, IIc, IIc  
DOUBLE-TAKE  
SIMONSEN, MARK  
BEAGLE BROS., \$34.95  
UTILITY  
TWO-WAY SCROLLING THROUGH LISTINGS AND  
CATALOGS, AND OTHER DISK UTILITIES

II, II+, IIc, IIc  
DRAGON'S KEEP  
SIERRA ON-LINE, \$24.95  
RECREATION  
A CUTE ADVENTURE FOR THE VERY YOUNG  
RESCUE ANIMALS FROM THE DRAGON.  
TEACHES VERY BASIC MAP READING

II, II+, IIc, IIc  
DROL  
BENG, AIK  
BRODERBUND, \$34.95  
RECREATION  
RESCUE A RED-HAIRED GIRL AND HER  
PROPELLER-BEANIED BROTHER FROM FLYING  
TURKEYS, MONSTERS & MAGNETS.

II, II+, IIc, IIc  
EASY AS ABC  
SPRINGBOARD, \$39.95  
EDUCATION  
LETTER RECOGNITION AND ALPHABET GAMES  
3 TO 6

II, II+, IIc, IIc  
ENCHANTER  
INFOCOM, \$39.95  
RECREATION  
A TEXT ADVENTURE--NO GRAPHICS  
10 TO ADULT

II, II+, IIc, IIc  
EXPEDITION AMAZON

PHILLIPS, WILLARD  
PENGUIN SOFTWARE, \$34.95  
RECREATION  
A FANTASY ROLE-PLAYING GAME SET IN THE JUNGLES  
OF PERU

II, II+, IIe, IIc  
EXPLORING TABLES AND GRAPHS  
WEEKLY READER/XEROX, \$29.95  
EDUCATION  
PRACTICE WITH LINE, BAR, PICTURE AND AREA GRAPHS  
AND TABLES.  
7 TO 10  
48K; OPTIONAL: SUPPORTED INTERFACE AND PRINTER

II, II+, IIe, IIc  
FACEMAKER  
SPINNAKER SOFTWARE, \$29.95  
EDUCATION  
CREATE FUNNY FACES AND ANIMATE THEM  
4 TO 12

IIe, IIc  
FACT AND FICTION TOOL KIT  
SCHOLASTIC, \$39.95  
EDUCATION  
INTRODUCTION TO DATABASE FILING AND CREATIVE  
WRITING  
8 AND UP  
128K, JOYSTICK OR MOUSE, PRINTER (OPTIONAL)

II+, IIe, IIc  
FAHRENHEIT 451  
TRILLIUM/SPINNAKER, \$39.95  
RECREATION  
AN ADAPTATION OF THE BOOK OF THE SAME NAME

II, II+, IIe, IIc  
FAMILY ROOTS  
QUINSEPT, \$188.50  
UTILITY  
THIS DATABASE IS DESIGNED FOR GENEALOGISTS, OR

ANYONE TRACKING PEDIGREES. POWERFUL SEARCH  
FUNCTION

II+, IIe, IIc

FANTAVISION

BRODERBUND, \$49.95

UTILITY

EASY, STATE-OF-THE-ART GRAPHICS ANIMATION  
PROGRAM

WORKS WITH KOALA PAD, MOUSE, APPLE GRAPHICS  
TABLET, OR JOYSTICK

64K

II, II+, IIe, IIc

FAX

EPYX, \$29.95

RECREATION

A FAST-PACED TRIVIA QUIZ FOR ONE OR TWO PLAYERS

10 TO ADULT

II, II+, IIe, IIc

FINANCIAL COOKBOOK

TROST, STAN

ELECTRONIC ARTS, \$49.95

UTILITY

VARIOUS FINANCIAL RECIPES FOR LOAN  
AMORTIZATION, BUY/LEASE OPTIONS, AND IRAS.

MOUSE (OPTIONAL)

II, II+, IIe, IIc

FLIGHT SIMULATOR II, VERSION 2.0

ARTWICK, BRUCE

SUBLOGIC, \$49.95

RECREATION

FLIGHT SIMULATION SOFTWARE FOR THE PIPER 181  
CHEROKEE ARCHER AIRCRAFT

II, II+, IIe, IIc

FLYING COLORS

NORBY, JOHN

COMPUTER COLORWORKS, \$39.95

GRAPHICS

MAKE YOUR OWN GRAPHICS. INCLUDES IMAGE  
SEQUENCER  
10 TO ADULT  
JOYSTICK

II+, IIe, IIc  
FONTRIX 1.5  
DATA TRANSFORMS, \$125.00  
UTILITY

THIS IS THE POOR MAN'S MACINTOSH, BUT TOO  
DIFFICULT FOR THE PUBLIC TO USE. LIBRARIANS WILL  
FIND MANY USES FOR ITS ATTRACTIVE FONTS:  
SIGNAGE, LOGOS, NEWSLETTERS. ADDITIONAL  
FONTPAKS (\$25 EACH) 1-15 ARE NOW AVAILABLE.

II, II+, IIe, IIc  
FOOBLITZKY  
INFOCOM, \$39.95  
RECREATION

A GRAPHICS STRATEGY GAME FOR 2-4 PLAYERS.  
SIMILAR TO THE GAME OF "CLUE," IT'S A DELIGHT!  
14 TO ADULT  
128K

II, II+, IIe, IIc  
FORMAT II  
KENSINGTON MICROWARE, \$150.00  
UTILITY  
WORD PROCESSOR

II, II+, IIe, IIc  
FOUR-IN-ONE INFOCOM SAMPLER  
INFOCOM, \$7.95  
RECREATION  
SAMPLES OF FOUR POPULAR INFOCOM ADVENTURES:  
ZORK I, INFIDEL, WITNESS, AND PLANETFALL

II, II+, IIe, IIc  
FRENCH  
ARTWORX, \$29.95  
EDUCATION  
COMES ON A FLIPPY DISK WITH IBM FILES ON ONE  
SIDE, APPLE FILES ON THE OTHER

**INCLUDES AN AUDIO CASSETTE TO TEACH FRENCH  
WORDS AND PHRASES**

**Ile, Iic**

**GATO**

**SPECTRUM HOLOBYTE, INC., \$39.95**

**RECREATION**

**A WORLD WAR II GATO CLASS SUBMARINE SIMULATION  
128K; OPTIONAL: JOYSTICK**

**II, II+, Ile**

**THE GENERAL MANAGER**

**SIERRA ON-LINE, \$230.00**

**WE CANNOT RECOMMEND THIS SOFTWARE FOR PUBLIC  
USE, AS WE FEEL IT IS TOO DIFFICULT TO USE.**

**WE INCLUDE PUBLISHER INFORMATION AS IT WAS  
PROMISED EARLIER IN THE TEXT.**

**II, II+, Ile, Iic**

**GEOMETRY**

**HAYDEN SOFTWARE, INC., \$39.95**

**EDUCATION**

**GEOMETRY MODULE OF THE SAT SCORE IMPROVEMENT  
SYSTEM**

**INCLUDES ANGLES, AREAS, CIRCLES, ETC.**

**HIGH SCHOOL**

**II, II+, Ile, Iic**

**GERMAN**

**ARTWORX, \$29.95**

**EDUCATION**

**COMES ON A FLIPPY DISK WITH APPLE FILES ON ONE  
SIDE, IBM ON THE OTHER**

**LEARN GERMAN WORDS AND PHRASES. INCLUDES A  
CASSETTE AUDIO TAPE**

**II, II+, Ile, Iic**

**GHOSTBUSTERS**

**CRANE, DAVID**

**ACTIVISION, \$39.95**

**RECREATION**

**ARCADE GAME BASED ON THE MOVIE OF THE SAME  
NAME**

II, II+, IIe, IIc

GPLE (GLOBAL PROGRAM LINE EDITOR)

KONZEN, NEIL

BEAGLE BROS., \$49.95

UTILITY

INCLUDES 3.3 DOS-MOVER, DEFINABLE ESCAPE  
FUNCTIONS, GLOBAL SEARCH AND REPLACE, AND MORE

II, II+, IIe, IIc

GRABIT FACTORY, THE

ERIC SOFTWARE, \$34.95

EDUCATION

NUMBER RECOGNITION AND EARLY ARITHMETIC SKILLS  
FOR CHILDREN

5 TO 8

II+, IIe, IIc

GRAPHICS EXPANDER FOR PRINT SHOP OWNERS

SPRINGBOARD, \$39.95

300 NEW GRAPHICS AND A NEW EDITOR FOR USE WITH  
PRINT SHOP

REQUIRES 64K

IIe, IIc

GRAPHWORKS 1.2C

PBI SOFTWARE, \$79.95

UTILITY

LINE, BAR, AND PIE GRAPHS FOR SPREADSHEET FILES  
MADE WITH APPLEWORKS

VERY HANDY AND EASY TO USE WITH SUPPORTED  
PRINTERS

II, II+, IIe, IIc

HITCHHIKER'S GUIDE TO THE GALAXY

ADAMS, DOUGLAS

INFOCOM, \$39.95

RECREATION

INTERACTIVE SCIENCE FICTION ADVENTURE, BASED ON  
THE NOVEL OF THE SAME NAME

STANDARD LEVEL

**II, II+, IIe, IIc**

**HODGE-PODGE**

**DYNACOMP, \$19.95**

**EDUCATION**

**A DIFFERENT GRAPHIC, ANIMATION, OR SOUND WITH  
EACH KEYPRESS**

**PRE-SCHOOL AGE**

**II, II+, IIe, IIc**

**HOMEWORD**

**SIERRA ON-LINE, \$39.95**

**UTILITY**

**PERSONAL WORD PROCESSOR FEATURING ICONS AND  
OTHER EASY-TO-USE COMMANDS**

**64K; OPTIONAL: SUPPORTED PRINTER**

**II, II+, IIe, IIc**

**I.O. SILVER**

**WILHELMSSEN, BRAD**

**BEAGLE BROS., \$34.95**

**RECREATION**

**ARCADE AND STRATEGY GAME FEATURING THE  
BUILDING OF A "SUPER COMPUTER"**

**12 AND UP**

**48K; OPTIONAL: JOYSTICK**

**II, II+, IIe, IIc**

**IN SEARCH OF THE MOST AMAZING THING**

**SNYDER, TOM**

**SPINNAKER, \$39.95**

**RECREATION**

**ADVENTURE GAMES FEATURING COOPERATION WITH  
SPACE CREATURES, ESTIMATING DISTANCES, ETC.**

**II, II+, IIe, IIc**

**INCREDIBLE LABORATORY, THE**

**SUNBURST COMMUNICATIONS, \$49.95**

**EDUCATION**

**MIX UP MONSTERS FROM CHEMICALS OF VARYING  
PROPERTIES.**

**HELPS TEACH PROBLEM SOLVING**

**9 TO ADULT**

II, II+, IIe, IIc  
KARATEKA  
MECHNER, JORDAN  
BRODERBUND SOFTWARE, \$34.95  
RECREATION  
SUSPENSEFUL KARATE GAME  
ANIMATED GRAPHICS

II, II+, IIe, IIc  
KEY LINGO  
READER'S DIGEST, \$39.95  
EDUCATION  
A VOCABULARY ADVENTURE  
11 AND OLDER

IIe, IIc  
KING'S QUEST  
WILLIAMS, ROBERTA  
SIERRA, \$69.95  
RECREATION  
AN ANIMATED ADVENTURE GAME  
128K, IIe REQUIRES REVISION B MOTHERBOARD,  
JOYSTICK (OPTIONAL)

II, II+, IIe, IIc  
LABEL PRINTER 1.0  
FENSTERER, RICK  
LPL SOFTWARE  
UTILITY  
THIS EASY-TO-USE UTILITY ALLOWS YOU TO GENERATE  
MULTIPLE COPIES OF THE SAME LABEL. EVERY  
LIBRARY SHOULD WRITE A DRIVER LIKE THIS FOR  
THEIR OWN PRINTERS.

II, II+, IIe, IIc  
LEARN ABOUT WORDS IN READING 2  
AMER. EDUCATIONAL COMPUTER, \$29.95  
EDUCATION  
PREFIXES, SUFFIXES, CONTRACTIONS, SYNONYMS, ETC.  
GRADES 2 TO 4

II, II+, IIe, IIc  
LEARN MORE ABOUT READING



AMERICAN EDUCATIONAL COMPUTER, \$29.95  
EDUCATION  
PHONICS FOR GRADES K-3  
5 TO 8  
48K

II, II+, IIe, IIc  
LODE RUNNER  
BRODERBUND, \$34.95  
RECREATION  
AN ARCADE GAME, LODE RUNNER ALLOWS THE  
PLAYERS TO CREATE THEIR OWN MAZES.  
10 TO ADULT  
JOYSTICK

II, II+, IIe, IIc  
MAGIC CASH REGISTER, THE  
BARSTOW, DANIEL  
AVANT-GARDE PUBLISHING CORP., \$34.95  
EDUCATION  
LEARN HOW TO HANDLE MONEY AND REINFORCE  
ARITHMETIC SKILLS.  
7 TO 12  
64K

II, II+, IIe, IIc  
MAGIC SPELLS  
THE LEARNING COMPANY, \$34.95  
EDUCATIONAL  
SPELLING GAMES  
INCLUDES SCRAMBLE SPELLS, FLASH SPELLS, AND  
SPELLS WRITER  
6 TO 10  
48K

II, II+, IIe, IIc  
MASTER OF THE LAMPS  
ACTIVISION, \$39.95  
RECREATION  
MUSIC AND COLOR FANTASY ARCADE GAME  
48K, JOYSTICK, COLOR MONITOR

II, II+, IIe, IIc  
MASTERTYPE  
ZWEIG, BRUCE  
LIGHTNING/SCARBOROUGH, \$34.95  
EDUCATION  
AN ARCADE-LIKE TYPING TUTORIAL, YOU MUST TYPE  
THE LETTERS BEFORE THEY GET YOU.  
TRACKS PROGRESS  
10 TO ADULT

II, II+, IIe  
MATH BLASTER  
DAVIDSON AND ASSOCIATES, \$49.95  
EDUCATION  
IMPROVES MATH SKILLS

II, II+, IIe, IIc  
MECC ELEMENTARY VOL. 3  
MECC, \$39.95  
EDUCATION  
CIVIL WAR SIMULATION, STATES, SELL APPLES, MORE  
GRAPHICS

II, II+, IIe, IIc  
MECC ELEMENTARY VOL. 1  
MECC, \$39.95  
EDUCATION  
MATH GAMES: BAGELS, HURKLE, METRICS  
GRAPHICS

II, II+, IIe, IIc  
MECC ELEMENTARY VOL. 4  
MECC, \$39.95  
EDUCATION  
ODELL LAKE FOOD CHAIN, URSA (CONSTELLATIONS),  
SOLAR DISTANCE, MORE  
GRAPHICS

II, II+, IIe, IIc  
MECC ELEMENTARY VOL. 6  
MECC, \$39.95  
EDUCATION

HISTORICAL SIMULATIONS: OREGON TRAIL, SUMERIA,  
NOMAD (MAP READING)  
AND MORE  
GRAPHICS

Ile, Iic  
MICRO COOKBOOK VERSION 2.3E  
VIRTUAL COMBINATICS, \$40  
UTILITY  
A COMPUTER COOKBOOK AND RECIPE MANAGEMENT  
SYSTEM  
64K, 80-COLUMN CARD; OPTIONAL: JOYSTICK,  
TRACKBALL, PRINTER

II, II+, Ile, Iic  
MICRO ILLUSTRATOR (KOALA PAD)  
DOMPIER, STEVEN  
ISLAND GRAPHICS/KOALAWARE, \$125.00  
UTILITY  
FOR USE WITH THE KOALA PAD  
DRAW ON THE PAD, AND YOUR DRAWING APPEARS ON  
THE SCREEN.  
KOALA PAD INCLUDED

II, II+, Ile, Iic  
MIND PROBER  
HUMAN EDGE SOFTWARE, \$49.95  
RECREATION  
PERSONALITY SOFTWARE THAT LETS YOU SEE PEOPLE  
HOW THEY REALLY ARE.  
PRINTER (OPTIONAL)

II, II+, Ile, Iic  
MINDSHADOW  
ACTIVISION, \$39.95  
RECREATION  
ILLUSTRATED TEXT ADVENTURE INVOLVING  
SELF-KNOWLEDGE  
64K

II, II+,Ile,Iic  
MULTIPLAN  
MICROSOFT, \$195.00

UTILITY

SPREADSHEET, MORE USER-FRIENDLY THAN VISICALC

II, II+, IIe, IIc

MURDER BY THE DOZEN

CBS SOFTWARE, \$34.95

RECREATION

12 MYSTERIES CHALLENGE YOUR DETECTIVE SKILLS.

SUPPORTS 1 TO 4 PLAYERS

II, II+, IIe, IIc

MUSIC CONSTRUCTION SET

HARVEY, WILL

ELECTRONIC ARTS, \$39.95

UTILITY

WRITE, EDIT, AND PLAY MUSIC IN TWO-PART HARMONY  
ON THE APPLE.

MOCKINGBOARD (OPTIONAL)

II, II+, IIe, IIc

NEW STEP BY STEP, THE

PROGRAM DESIGN, INC., \$89.95

EDUCATION

AN INTERACTIVE COURSE IN APPLESOFT BASIC FOR  
BEGINNERS

INCLUDES 4 AUDIO CASSETTES

ADULT

II, II+, IIe, IIc

NEWSROOM, THE

SPRINGBOARD, \$49.95

UTILITY

WORD PROCESSING AND CLIP ART UTILITY TO CREATE  
NEWSLETTERS

64K, SUPPORTED PRINTER

II, II+, IIe, IIc

NUMBER FARM

DLM/ARGUS COMMUNICATIONS, \$29.95

EDUCATION

SIX FASCINATING GAMES TO HELP CHILDREN LEARN  
THEIR NUMBERS

GREAT SOUND EFFECTS

3 TO 7

**II, II+, IIe, IIc**

**NUTRI-BYTE ANALYZER**

**ISC CONSULTANTS, \$49.95**

**UTILITY**

**CALORIE AND NUTRITION GUIDE WITH OVER 1200**

**FOODS IN ITS DATABASE**

**64K, TWO DISK DRIVES**

**II, II+, IIe, IIc**

**ONE-ON-ONE**

**HAMMOND, ERIC**

**ELECTRONIC ARTS, \$39.95**

**RECREATION**

**PLAY ONE-ON-ONE BASKETBALL AGAINST THE  
COMPUTER.**

**FEATURES LARRY BIRD AND DR. J.**

**JOYSTICK, MOCKINGBOARD (OPTIONAL)**

**IIe, IIc**

**ORTHO'S COMPUTERIZED GARDENING, VERSION 1.0**

**ORTHO INFORMATION SERVICES, \$49.95**

**UTILITY**

**PERSONALIZED PLANT SELECTOR DISK WITH 750**

**PLANTS LOCALIZED BY ZIP CODE**

**64K, 80-COLUMN, PRODOS; OPTIONAL: PRINTER**

**II, II+, IIe, IIc**

**PASCAL FOR THE APPLE**

**MACCALLUM, IAIN**

**PRENTICE-HALL, \$49.95**

**EDUCATION**

**TUTORIAL FOR APPLE PASCAL**

**ADULT**

**IIe, IIc**

**PERFECT WRITER/PERFECT SPELLER/PERFECT THE-  
SAURUS**

**THORN EMI, \$200.00**

**UTILITY**

**INTEGRATED WORD PROCESSING PACKAGE**

II, II+, IIe, IIc

PETERSON'S FINANCIAL AID SERVICE '85

PETERSON'S GUIDES, \$156.00

EDUCATION

HELPS FIND PRIVATE FINANCIAL AID PROGRAMS AND

HELPS ESTIMATE COSTS AT OVER 1700 FOUR-YEAR  
COLLEGES

HIGH SCHOOL

II, II+, IIe, IIc

PFS: REPORT

SOFTWARE PUBLISHING CORP., \$125.00

UTILITY

AN EASY-TO-USE REPORT GENERATOR FOR FILES  
CREATED WITH PFS FILE

IIe, IIc

PFS: FILE IIc

PAGE, JOHN/ROBERTS, D.D.

SOFTWARE PUBLISHING CORP., \$125.00

UTILITY

AN EASY-TO-USE DATABASE MANAGEMENT SYSTEM

APPLE IIe or IIc, 128K

II, II+, IIe, IIc

PFS: WRITE, REV. E

SOFTWARE PUBLISHING CORP., \$125.00

UTILITY

WORD PROCESSOR INTEGRATED WITH THE PFS FAMILY  
OF SOFTWARE

64K, 80-COLUMN CARD

II, II+, IIe, IIc

PINBALL CONSTRUCTION SET

BUDGE, WILLIAM

BRODERBUND, \$34.95

RECREATION

CREATE YOUR OWN PINBALL GAMES WITH NO  
PROGRAMMING KNOWLEDGE.

JOYSTICK

II, II+, IIe, IIc

PRINT SHOP, THE

BALSAM, DAVID

BRODERBUND, \$49.95

UTILITY

DESIGN AND PRINT GREETING CARDS, STATIONERY,  
BANNERS, AND SIGNS.

INCLUDES ONLINE CLIP ART

II, II+, IIe, IIc

PRINT SHOP COMPANION, THE

BRODERBUND, \$39.95

UTILITY

MORE FONTS, EDITORS, AND BORDERS FOR USE WITH  
YOUR COPY OF PRINT SHOP

II, II+, IIe, IIc

PRINT SHOP GRAPHICS LIBRARY DISKS 1 AND 2

BALSAM, DAVID

BRODERBUND, \$24.95 EACH

UTILITY

120 CLIP ART GRAPHICS TO BE USED WITH PRINT SHOP  
INCLUDES JOBS, HOBBIES, PEOPLE, PLACES, HEALTH  
AND MORE

REQUIRES THE PRINT SHOP PROGRAM DISK

II, II+, IIe, IIc

PUBLIC DOMAIN SOFTWARE ON FILE

FACTS ON FILE, \$195

EDUCATION

OVER 200 PROGRAMS ON 10 UNPROTECTED DISKS  
COVERS EDUCATION, GAMES, BUSINESS, GRAPHICS,  
UTILITIES, AND MORE, ALL DEBUGGED AND  
MENU-DRIVEN

BOTH DOS AND PRODOS PROGRAMS ARE INCLUDED.

II, II+, IIe, IIc

PUZZLE MANIA

MESSINA, FRANK

READER'S DIGEST, \$39.95

RECREATION

A SET OF LO-RES VIDEO JIGSAW PUZZLES

8 AND UP

II, II+, IIe, IIc

QUANTITATIVE COMPARISONS/WORD PROB.

HAYDEN SOFTWARE, \$39.95

EDUCATION

PRACTICE WITH FRACTIONS, WORD PROBLEMS, GRAPHS,  
ETC. PART OF THE SAT SCORE IMPROVEMENT SYSTEM  
HIGH SCHOOL

II, II+, IIe, IIc

QUESTRON

DOUGHERTY, CHARLES

STRATEGIC SIMULATIONS, \$59.95

RECREATION

TERRIBLE MONSTERS ROAM THE COUNTRYSIDE AND IT  
IS UP TO YOU TO SAVE THE QUESTRON EMPIRE!

II, II+, IIe, IIc

RAILROAD WORKS, THE

CBS SOFTWARE, \$39.95

RECREATION

MODEL RAILROADING AND TRAIN GAMES

12 TO ADULT

OPTIONAL: JOYSTICK OR MOUSE

II, II+, IIe, IIc

READER RABBIT

GRIMM, LESLIE

THE LEARNING COMPANY, \$39.95

EDUCATION

LEARN READING SKILLS AS READER RABBIT GIVES YOU  
A TOUR THROUGH THE FABULOUS WORD FACTORY  
5 TO 7

II, II+, IIe, IIc

READING COMPREHENSION

HAYDEN SOFTWARE, \$39.95

EDUCATION

READING COMPREHENSION MODULE TO THE SAT SCORE  
IMPROVEMENT SYSTEM  
HIGH SCHOOL

II, II+, IIe, IIc

READING COMPREHENSION SKILLS 1



AMER. EDUCATIONAL COMPUTER, \$24.95

EDUCATION

PRESENTS BEGINNING EXERCISES IN READING: CAUSE  
& EFFECT, SIMILARITIES & DIFFERENCES, ETC.

GRADES 1 TO 3

II, II+, IIe, IIc

ROAD RALLY U.S.A.

BANTAM SOFTWARE, \$34.95

RECREATION

A DRIVING GAME TO TEACH GEOGRAPHY

10 AND UP

64K, DOS 3.3

II, II+, IIe, IIc

ROBOT ODYSSEY I

THE LEARNING COMPANY, \$49.95

RECREATION

ROBOT CONSTRUCTION SET AND ADVENTURE GAME  
TEACHES LOGIC AND CHIP DESIGN

13 TO ADULT

COLOR MONITOR

II, II+, IIe, IIc

SAT ENGLISH I

MICRO LEARN, \$30.00

EDUCATION

AN SAT DRILL AND TUTORIAL FOR ENGLISH,  
INCLUDING ANALOGIES, READING COMPREHENSION,  
ETC.

HIGH SCHOOL

II, II+, IIe, IIc

SAT MATH I

MICRO LEARN, \$30.00

EDUCATION

AN SAT DRILL AND TUTORIAL IN MATH INCLUDING  
ALGEBRA AND GEOMETRY

CAN BE COMPLETED IN 1/2 HOUR

HIGH SCHOOL

II, II+, IIe, IIc

SAMPLE SAT TESTS

HAYDEN SOFTWARE, \$19.95

EDUCATION

A PRE-TEST AND TWO SCHOLASTIC APTITUDE TESTS IN  
THE SAT SCORE IMPROVEMENT SYSTEM

HIGH SCHOOL

II+, IIe, IIc

SCIENCE TOOLKIT

BRODERBUND, \$59.95

EDUCATION

EXPERIMENTS WITH LIGHT AND TEMPERATURE PROBES,  
RECORDS DATA

THIS IS THE MASTER MODULE WHICH INCLUDES THE  
INTERFACE BOX REQUIRED FOR FUTURE RELEASES. II+  
REQUIRES A IIe GAME PORT ADAPTER.

64K; OPTIONAL: PRINTER

II+, IIe, IIc

SCREENWRITER/THE DICTIONARY

SIERRA ON-LINE, \$200

UTILITY

WORD PROCESSOR, BUT MUCH HARDER THAN  
APPLEWORKS

HAS OWN SPELLING CHECKER

II, II+, IIe, IIc

SEASTALKER

INFOCOM, \$39.95

RECREATION

INTERACTIVE FICTION SUBMARINE ADVENTURE GAME  
TEXT ONLY; FOR BEGINNERS

9 AND UP

II, II+, IIe, IIc

SECRETS OF SCIENCE ISLAND

GROLIER, \$34.95

EDUCATION

RESEARCH SKILLS AND A FUN GAME, LEARN MANY  
SCIENCE FACTS

8 AND UP

II, II+, IIe, IIc  
SEVEN CITIES OF GOLD, THE  
ELECTRONIC ARTS, \$39.95  
RECREATION  
A HISTORICAL AND ROLE-PLAYING ADVENTURE OF  
EXPLORATION AND CONQUEST  
JOYSTICK, YOUR OWN BLANK DISK

II, II+, IIe, IIc  
SHAPE AND COLOR RODEO  
DLM, \$29.95  
EDUCATION  
TEACHES SHAPE RECOGNITION AND COLORS  
3 AND UP

II, II+, IIe, IIc  
SILICON SALAD  
KERSEY, BERT  
BEAGLE BROS., \$24.95  
UTILITY  
MULTI-UTILITY COLLECTION INCLUDING DISK SCANNER,  
TWO COLUMN CATALOGS, TWO LINE PROGRAMS, ETC.

II, II+, IIe, IIc  
SKYFOX  
TOBEY, RAY  
ELECTRONIC ARTS, \$39.95  
RECREATION  
A FAST-PACED 3-DIMENSIONAL FIGHTER SIMULATION  
GAME  
JOYSTICK

II, II+, IIe, IIc  
SORCERER  
INFOCOM, \$34.95  
RECREATION  
SECOND IN THE ENCHANTER SERIES OF ADVENTURES  
IN THE MYSTIC ARTS

II, II+, IIe, IIc  
SPEED READER II  
DAVIDSON AND ASSOCIATES, \$54.95  
EDUCATION

READING DEVELOPMENT COURSE TO IMPROVE READING  
SPEED AND COMPREHENSION  
HIGH SCHOOL +

II, II+, IIe, IIc  
SPELLBREAKER  
INFOCOM, \$49.95  
RECREATION  
THIRD IN THE ENCHANTER SERIES OF TEXT  
ADVENTURES  
EXPERT LEVEL

II, II+, IIe, IIc  
SPELLING  
AMERICAN EDUCATION COMPUTER, \$19.95  
EDUCATION  
EASY SPELLING FOR EARLY GRADES OR ADULT  
LITERACY

II, II+, IIe, IIc  
STANDARD & POOR'S STOCKPAK II  
CBS SOFTWARE, \$245.00  
UTILITY  
STOCK ANALYSIS TOOL FOR OVER 1,500 COMPANIES  
48K; OPTIONAL: SUPPORTED PRINTER & INTERFACE

II, II+, IIe, IIc  
STEP BY STEP THREE  
PROGRAM DESIGN, INC., \$89.95  
EDUCATION  
AN INTRODUCTION TO APPLE II DISK OPERATING  
SYSTEM  
DESIGNED FOR USE AFTER STEP BY STEP 1 AND 2  
HAVE BEEN COMPLETED

II, II+, IIe, IIc  
STEP BY STEP TWO  
PROGRAM DESIGN, INC., \$89.95  
EDUCATION  
TEN-LESSON TUTORIAL IN INTERMEDIATE BASIC  
HI-RES GRAPHICS, MUSIC, ETC.  
INCLUDES 4 AUDIO CASSETTES

**II, II+, IIe, IIc**

**STICKYBEAR ABC**

**HEFTER, RICHARD**

**WEEKLY READER/XEROX, \$39.95**

**EDUCATION**

**AN ALPHABET GAME FOR CHILDREN**

**INCLUDES PARENT GUIDE AND STORYBOOK**

**3 TO 6**

**II, II+, IIe, IIc**

**STICKYBEAR NUMBERS**

**HEFTER, RICHARD**

**WEEKLY READER/XEROX, \$39.95**

**EDUCATION**

**COUNTING FUN FOR CHILDREN**

**INCLUDES PARENT GUIDE AND STORYBOOK**

**3 TO 6**

**II, II+, IIe, IIc**

**STICKYBEAR OPPOSITES**

**HEFTER, RICHARD**

**WEEKLY READER/XEROX, \$39.95**

**EDUCATION**

**CONCEPTS OF OPPOSITES, BIG AND LITTLE, ETC.**

**INCLUDES PARENT GUIDE AND STORYBOOK**

**3 TO 6**

**II, II+, IIe, IIc**

**STICKYBEAR READING**

**WEEKLY READER/XEROX, \$39.95**

**EDUCATION**

**EARLY WORDS, ANIMATED WRITE-IT-YOURSELF**

**SENTENCES**

**3 AND UP**

**II, II+, IIe, IIc**

**STICKYBEAR SHAPES**

**HEFTER, RICHARD**

**WEEKLY READER/XEROX, \$39.95**

**EDUCATION**

**LEARN SHAPES**

**INCLUDES PARENT GUIDE AND STORYBOOK**

**3 TO 6**

II, II+, IIe, IIc  
SUCCESS WITH MATH: ADDITION & SUB.  
ROSS, DON  
CBS SOFTWARE, \$24.95  
EDUCATION  
MATH TUTORIALS FOR GRADE LEVELS 1 TO 4  
6 TO 10

II, II+, IIe, IIc  
SUCCESS WITH MATH: MULT. & DIV.  
ROSS, DON  
CBS SOFTWARE, \$24.94  
EDUCATION  
MATH TUTORIALS FOR GRADE LEVELS 2 TO 8

II, II+, IIe, IIc  
SUMMER GAMES  
EPYX, \$39.95  
RECREATION  
EIGHT SUMMER OLYMPIC EVENTS FOR ONE OR MORE  
PLAYERS  
ROUGH ON JOYSTICKS, THOUGH

II, II+, IIe, IIc  
SUMMER GAMES II  
EPYX, \$39.95  
RECREATION  
COMPETITION IN 8 OLYMPIC EVENTS, INCLUDING  
TRIPLE JUMP, ROWING, JAVELIN, EQUESTRIAN, HIGH  
JUMP, FENCING, CYCLING, AND KAYAKING  
64K; OPTIONAL: JOYSTICK

II+, IIe, IIc  
TAKE 1  
BAUDVILLE, \$59.95  
UTILITY  
MOVIE-MAKER AND ANIMATION GRAPHICS EDITOR  
REQUIRES 64K

II, II+, IIe, IIc  
TIME ZONE  
WILLIAMS, ROBERTS  
SIERRA/ONLINE, \$100.00

**RECREATION**

**RESCUE THE WORLD FROM RAMADU, SINISTER RULER  
OF THE PLANET NEBRON.  
LIGHT YEARS OF FUN! (6 DISKS!!)**

**II, II+, IIe, IIc**

**TONK IN THE LAND OF THE BUDDY-BOTS**

**MAYER, MERCER**

**SPROUT, \$39.95**

**EDUCATION**

**PART OF THE TINK! TONK! SERIES**

**A ROBOTIC ADVENTURE AND SEVERAL SHAPE-  
RECOGNITION GAMES**

**4 TO 8**

**II, II+, IIe, IIc**

**TRACER SANCTION, THE**

**ACTIVISION, \$35.95**

**RECREATION**

**ILLUSTRATED TEXT ADVENTURE IN OUTER SPACE**

**II, II+, IIe, IIc**

**TRANSYLVANIA**

**ANTIOCHIA, ANTONIO**

**PENGUIN SOFTWARE, \$29.95**

**RECREATION**

**RESCUE SABRINA BEFORE MIDNIGHT AND WATCH OUT  
FOR THE...ARRGGGH!**

**II, II+, IIe, IIc**

**TROLL'S TALE**

**SIERRA/ONLINE, \$24.95**

**RECREATION**

**RESCUE TREASURES FROM THE TROLL'S CAVERN.  
TEACHES BASIC MAP-READING AND LOGIC SKILLS**

**6 TO 10**

**II, II+, IIe, IIc**

**ULTIMA IV QUEST OF THE AVATAR**

**ORIGIN SYSTEMS, \$59.95**

**RECREATION**

LATEST SEQUEL TO THE ULTIMA SERIES, ADVENTURE  
GAMING AT ITS BEST  
REQUIRES 64K

II, II+, IIe, IIc  
VISICALC  
VISICORP

THIS ORIGINAL SPREADSHEET IS OUT OF PUBLICATION.  
THE SPREADSHEET IN APPLEWORKS IS MUCH BETTER  
FOR PUBLIC USE.

II, II+, IIe, IIc  
VOCABULARY

HAYDEN SOFTWARE, INC., \$39.95  
EDUCATION

A MODULE IN ANTONYMS, ANALOGIES, AND SENTENCE  
COMPLETIONS  
PART OF THE SAT SCORE IMPROVEMENT SYSTEM  
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*Apple Library Users' Group Newsletter*

Monica Ertel

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*Booklist*

American Library Association

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*Library Journal*

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*Software Reviews on File*

Facts on File, Inc.

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*Voice of Youth Advocates*

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*Wilson Library Bulletin*

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### *Wired Librarian's Newsletter*

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### **Consumer-Oriented Review Sources Mentioned in Text**

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